ORDER NO. VM0602006CE

# Service Manual

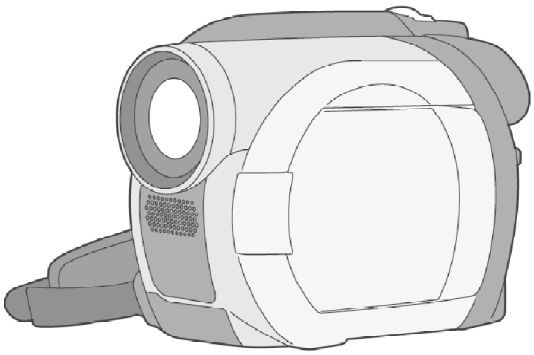
## Digital Video Camcorder

## VDR-D100EB VDR-D100EG / VDR-D150E VDR-D150EB / VDR-D150EE VDR-D150EF / VDR-D150EG VDR-D150EP / VDR-D150GC VDR-D150GCS / VDR-D150GN VDR-D150SG / VDR-D152EG VDR-D158GK

**Vol. 1**

**Colours**

**(S).....Silver Type**



PbF
Solder Lead free

**SPECIFICATIONS**



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**⚠ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public.
It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product.
Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product or products dealt with in this service information by anyone else could result in serious injury or death.

Panasonic

# 1. Safety Precautions

## 1.1. General Guidelines

1. **IMPORTANT SAFETY NOTICE**
   **There are special components used in this equipment which are important for safety. These parts are marked by ⚠ in the Schematic Diagrams, Circuit Board Layout, Exploded Views and Replacement Parts List. It is essential that these critical parts should be replaced with manufacturer's specified parts to prevent shock, fire, or other hazards. Do not modify the original design without permission of manufacturer.**
2. **An Isolation Transformer should always be used during the servicing of AC Adaptor whose chassis is not isolated from the AC power line. Use a transformer of adequate power rating as this protects the technician from accidents resulting in personal injury from electrical shocks. It will also protect AC Adaptor from being damaged by accidental shorting that may occur during servicing.**
3. **When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.**
4. **After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.**
5. **After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.**

# 2. Warning

## 2.1. Prevention of Electro Static Discharge (ESD) to Electrostatically



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## Sensitive (ES) Devices

**Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by electro static discharge (ESD).**

1. **Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any ESD on your body by touching a known earth ground. Alternatively, obtain and wear a commercially available discharging ESD wrist strap, which should be removed for potential shock reasons prior to applying power to the unit under test.**
2. **After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as aluminum foil, to prevent electrostatic charge buildup or exposure of the assembly.**
3. **Use only a grounded-tip soldering iron to solder or unsolder ES devices.**
4. **Use only an antistatic solder removal device. Some solder removal devices not classified as "antistatic (ESD protected)" can generate electrical charge sufficient to damage ES devices.**
5. **Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.**
6. **Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (Most replacement ES devices are packaged with leads electrically shorted together by conductive foam, aluminum foil or comparable conductive material).**
7. **Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.**

   **CAUTION :**

   **Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.**
8. **Minimize bodily motions when handling unpackaged replacement**



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**ES devices. (Otherwise harmless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity (ESD) sufficient to damage an ES device).**

## 2.2. Caution for AC Cord / (VJA0940 type)

### 2.2.1. Information for your safety

**IMPORTANT**

**Your attention is drawn to the fact that recording of pre-recorded tapes or discs or other published or broadcast material may infringe copyright laws.**

**WARNING**

**To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.**

**CAUTION**

**To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.**

**FOR YOUR SAFETY**

**DO NOT REMOVE THE OUTER COVER**

**To prevent electric shock, do not remove the cover. No user serviceable parts inside. Refer servicing to qualified service personnel.**

### 2.2.2. Caution for AC Mains Lead

**For your safety, please read the following text carefully.**

**This appliance is supplied with a moulded three-pin mains plug for your safety and convenience.**

**A 5-ampere fuse is fitted in this plug.**

**Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 5 amperes and it is approved by ASTA or BSI to BS1362.**

**Check for the ASRA mark or the BSI mark on the body of the fuse.**




**If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.**

**If you lose the fuse cover, the plug must not be used until a replacement cover is obtained.**

**A replacement fuse cover can be purchased from your local Panasonic Dealer.**

**If the fitted moulded plug is unsuitable for the socket outlet in your home then the fuse should be removed and the plug cut off and disposed of safety.**

**There is a danger of severe electrical shock if the cut off plug is inserted into any 13-ampere socket.**

**If a new plug is to be fitted please observe the wiring code as shown below.**

**If in any doubt, please consult a qualified electrician.**

#### 2.2.2.1. Important

**The wires in this mains lead are coloured in accordance with the following code:**

| | |
|---|---|
| Blue | Neutral |
| Brown | Live |

**As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:**

**The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.**



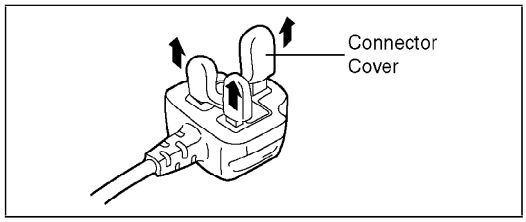
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**The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.**
**Under no circumstances should either of these wires be connected to the earth terminal of the three pin plug, marked with the letter E or the Earth Symbol.**

| Earth Symbol | ⏚ |
|---|---|

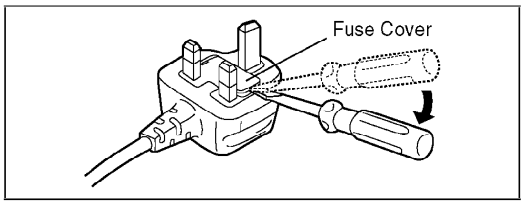
#### 2.2.2.2. Before use

**Remove the Connector Cover as follows.**

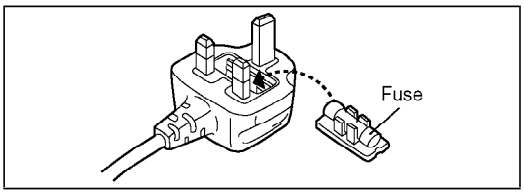



#### 2.2.2.3. How to replace the Fuse

## 1. Remove the Fuse Cover with a screwdriver.

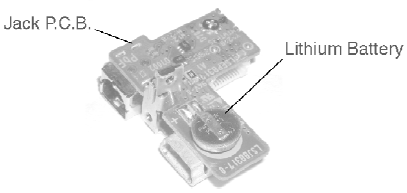



## 2. Replace the fuse and attach the Fuse cover.




## 2.3. How to Replace the Lithium Battery

**The lithium battery (ML-621S/F9D) is not supplied as a service part and must be replaced as part of the Cassette Cover Unit. (Refer to "Disassembly and Assembly Instructions.")**




Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type.

CAUTION - The battery used in this device may present a risk of fire or chemical burn if mistreated.
Do not recharge, disassemble, heat above 100 °C (212 °F), or incinerate.
Replace battery with Panasonic part number ML-621S/F9D only.
Use of another battery may present a risk of fire or explosion.
Dispose of used battery promptly. Keep away from children.
Do not disassemble and do not dispose of in fire.

**NOTE:**

**This Lithium battery is a critical component. (Type No.: ML-621S/F9D Manufactured by Panasonic.) (Not supplied)**
**It must never be subjected to excessive heat or discharge.**
**It must therefore only be fitted in equipment designed specifically**



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**for its use.**
**Replacement batteries must be of the same type and manufacture.**
**They must be fitted in the same manner and location as the original battery, with the correct polarity contacts observed.**
**Do not attempt to re-charge the old battery or re-use it for any other purpose.**
**It should be disposed of in waste products destined for burial rather than incineration.**

| **CAUTION** |
| --- |
| Danger of explosion if battery is incorrectly replaced.<br>Replace only with the same or equivalent type recommended by the equipment manufacturer.<br>Discard used batteries according to manufacturer's instructions. |

| **PRECAUTION** |
| --- |
| Le fait de remplacer incorrectement la pile peut présenter des risques d'explosion.<br>Remplacer la pile uniquement par une pile identique ou de type équivalent recommandée par le fabricant. Se débarrasser des piles usagées conformément aux instructions du fabricant. |

| **VORSICHT** |
| --- |
| Bei einer falsch eingesetzten Batterie besteht Explosionsgefahr. Nur mit einer vom Hersteller empfohlenen Batterie vom gleichen Typ ersetzen.<br>Verbrauchte Batterien beim Fachhändler oder einer Sammelstelle für Sonderstoffe abliefern. |

| **VARNING** |
| --- |
| Explosionsfara vid felaktigt batteribyte.<br>Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.<br>Kassera använt batteri enligt fabrikantens instruktion. |

| **ADVARSEL!** |
| --- |
| Lithiumbatteri-Eksplosionsfare ved fejlagtig håndtering.<br>Udskiftning má kun ske med batteri af samme fabrikat og type.<br>Levér det brugte batteri tilbage til leverandøren. |

| **VAROITUS** |
| --- |
| Paristo voi räjähtää, jos se on virheellisesti asennettu.<br>Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.<br>Hävitä käytetty paristo valmistajan ohjeiden mukaisesti. |

# 3. Service Navigation

## 3.1. Introduction

**This service manual contains technical information which will allow service personnel's to understand and service this model. Please place orders using the parts list and not the drawing reference numbers.**
**If the circuit is changed or modified, this information will be followed by supplement service manual to be filed with original service manual.**

**Note 1:**

**1. VSK0561 is indicated on the AC Adaptor used in the following model:**
**VDR-D158GK.**



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However, the AC Adaptor replacement part number is DE-974HA which should be used when ordering.

2. VSK0561 is indicated on AC Adaptor used in the following models: VDR-D100EB, VDR-D100EG, VDR-D150E, VDR-D150EB, VDR-D150EE, VDR-D150EF, VDR-D150EG, VDR-D150EP, VDR-D150GC, VDR-D150GCS, VDR-D150GN, VDR-D150SG, and VDR-D152EG. However, the AC Adaptor replacement part number is DE-974GB which should be used when ordering.

**Note 2:**

1. This service manual does not contain the following information, because of the impossibility of servicing at component level.
   A. Schematic Diagram, Block Diagram and P.C.B. layout of Main P.C.B.
   B. Parts List for individual parts of Main P.C.B.
2. The following category are recycle module parts. Please send it to Central Repair Center.
   A. *Main P.C.B. (LSEP8314P1/ LSEP8314Q1)

When a part replacement is required for repairing Main P.C.B., replace the assembly parts.

### 3.2. About Lead Free Solder (PbF)

**Distinction of PbF PCB:**
**PCBs (manufactured) using lead free solder will have a PbF stamp on the PCB.**

**Caution:**

- Pb free solder has a higher melting point than standard solder; Typically the melting point is 50-70°F (30-40°C) higher. Please use a high temperature soldering iron. In case of the soldering iron with temperature control, please set it to 700±20°F (370±10°C).
- Pb free solder will tend to splash when heated too high (about 1100°F/600°C).

When soldering or unsoldering, please completely remove all of the solder on the pins or solder area, and be sure to heat the soldering points with the Pb free solder until it melts enough.

# 4. Specifications



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| ITEM | SPECIFICATION | 1 | 2 |
|---|---|---|---|
| Power | DVD Video Camera:<br>Power source: DC 7.9 V/7.2 V<br>Power consumption: Recording<br>Approx. 3.9 W (When using viewfinder)<br>Approx. 4.3 W (When using LCD monitor)<br>(When using a DVD-RAM disc and the recording mode is [XP].)<br>AC adaptor:<br>Power source: AC 110 V to 240 V, 50/60 Hz<br>Power consumption: 19 W<br>DC output: DC 7.9 V, 1.4 A (Unit operation)<br>DC 8.4 V, 0.65 A (Battery charging) | ○ | ○ |
| Signal system | CCIR: 625 lines, 50 fields PAL colour signal | ○ | ○ |
| Recording format | DVD Video Recording format (DVD-RAM, DVD-RW)<br>DVD-Video format (DVD-RW, DVD-R) | ○ | ○ |
| Image sensor | 1/6-inch CCD image sensor<br>Total pixels: approx. 800 K<br>Effective pixels (Motion picture): approx. 400 K | ○ | ○ |
| Lens | 30× power zoom<br>F1.8 to F3.9 (f = 1.90 mm to 57.0 mm,<br>35 mm equivalent: 35.7 mm to 1072 mm) | ○ | ○ |
| Filter diameter | 30.5 mm | ○ | ○ |
| Zoom | 30× optical zoom, 50/1000× digital zoom | ○ | ○ |
| Monitor | 2.5″ LCD monitor (approx. 105 K pixels) | ○ | ○ |
| Viewfinder | Colour electric viewfinder (approx. 123 K pixels) | ○ | ○ |
| Microphone | Stereo (with a zoom function) | ○ | ○ |
| Speaker | 1 round speaker Ø 20 mm | ○ | ○ |
| Standard illumination | 1,400 lx | ○ | ○ |
| Minimum required illumination | 12 lx (2 lx with the Night view function) | ○ | ○ |

| ITEM | SPECIFICATION | 1 | 2 |
|---|---|---|---|
| Video output level | 1.0 Vp-p 75 Ω | ○ | ○ |
| S-Video output level | Y: 1.0 Vp-p, 75 Ω<br>C: 0.3 Vp-p, 75 Ω | ○ | ○ |
| Audio output level (Line) | 316 mV, 600 Ω | ○ | ○ |
| USB | Card reader/writer function (No copyright protection support)<br>USB 2.0 compliant (Hi-Speed)<br>PictBridge-compliant | –<br>○<br>– | ○<br>○<br>○ |
| Motion pictures | Recording media: 8 cm DVD-RAM Ver. 2.1<br>8 cm DVD-RW Ver. 1.1/2X-SPEED (2X/1X)<br>8 cm DVD-R for General Ver. 2.0<br>Compression: MPEG2<br>Recording mode and transfer rate: XP: 9 Mbps (VBR)<br>SP: 5 Mbps (VBR)<br>LP: 2.5 Mbps (VBR)<br>Audio compression: Dolby Digital (Dolby AC3), 16 bit (48 kHz/2 ch) | ○ | ○ |
| Still pictures | Recording media: SD Memory Card (8 MB/16 MB/32 MB/64 MB/128 MB/256 MB/512 MB/1 GB/2 GB (Maximum))<br>Compression: JPEG (Design rule for Camera File system, based on Exif 2.2 standard), DPOF corresponding<br>Picture size: 640 × 480 | – | ○ |
| Operating temperature | 0 °C to 40 °C | ○ | ○ |
| Operating humidity | 10% to 80% | ○ | ○ |
| Mass | DVD Video Camera: 480 g (without supplied battery, lens cap and a disc)<br>AC adaptor: 110 g | ○ | ○ |
| Dimensions | DVD Video Camera: 53 mm (W) × 87 mm (H) × 129 mm (D) (excluding projecting parts)<br>AC adaptor: 61 mm (W) × 32 mm (H) × 91 mm (D) | ○ | ○ |
| **Solder** | **This model uses lead free solder (PbF).** | ○ | ○ |

1. VDR-D100EB/ VDR-D100EG
2. VDR-D150E/ VDR-D150EB/ VDR-D150EE/ VDR-D150EF/ VDR-D150EG/ VDR-D150EP/ VDR-D150GC/ VDR-D150GCS/ VDR-D150GN/ VDR-D150SG/ VDR-D152EG/ VDR-D158GK

Mass and dimensions are approximate values.
Specifications may change without prior notice.

# 5. Location of Controls and Components

**Followings are the Operation Guide for VDR-D100EB/D150EB as a sample.**
**For other models, refer to each original Operation Guide.**

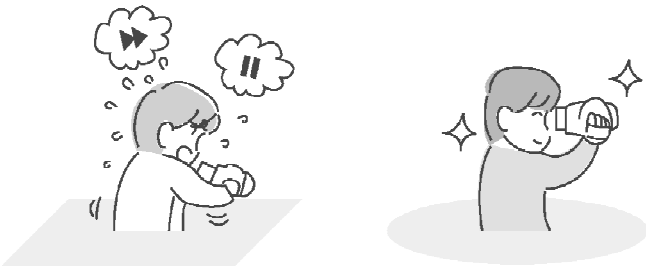


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# Features

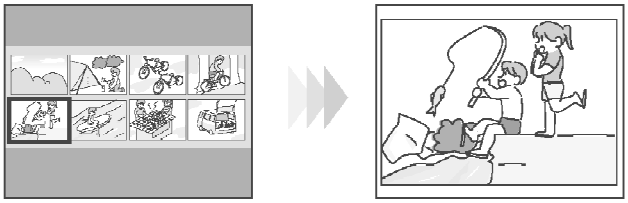
## ■ Easy recording! (➜ 39)

No need to search for the recording start position.
The new recording will not overwrite any previously recorded scene.



## ■ Easy playback! (➜ 62)

Recorded scenes are displayed as thumbnails.
You can easily search for the scenes you want to watch.





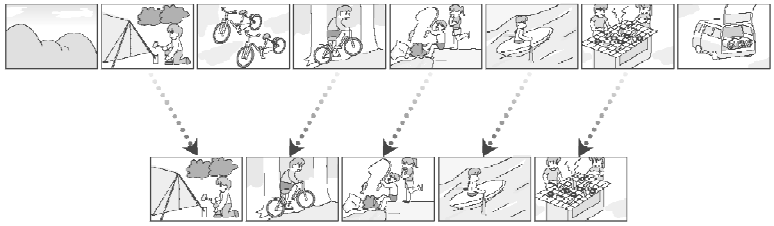




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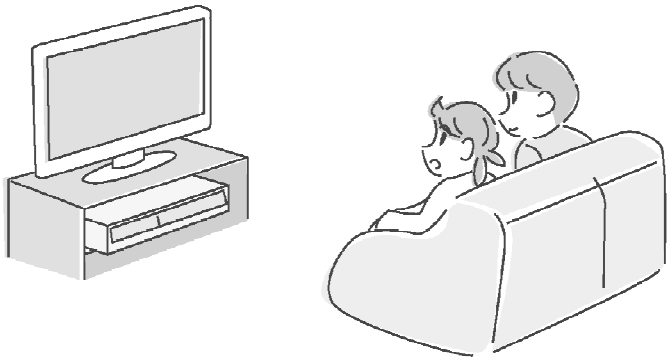
### ■ Editing scenes! (➜ 67, 71)

You can create an original video (playlist) by collecting your favourite scenes together and then easily dub this video to a VCR or a DVD recorder hard disk.



### ■ Using with DVD player/recorder! (➜ 91)

Just insert the disc into a DVD player/recorder compatible with 8 cm discs to play back the scenes recorded with this unit on it.
If you have a DVD recorder with hard disk, you can dub scenes recorded on DVD-RAM or DVD-RW (VR format) with this unit to the hard disk.









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## ■ Sales and Support Information

Customer Care Centre
- For customers within the UK: 08705 357357
- For customers within the Republic of Ireland: 01 289 8333
- Visit our website for product information
- E-mail: customer.care@panasonic.co.uk

Technical Support for AV Software
- For UK, ROI: 08701 505610

Direct Sales at Panasonic UK
- Order accessory and consumable items for your product with ease and confidence by phoning our Customer Care Centre Monday–Thursday 9.00 a.m.–5.30 p.m., Friday 9.30 a.m.– 5.30 p.m. (Excluding public holidays)
- Or go on line through our Internet Accessory ordering application at www.panasonic.co.uk.
- Most major credit and debit cards accepted.
- All enquiries transactions and distribution facilities are provided directly by Panasonic UK Ltd.
- It couldn't be simpler!
- Also available through our Internet is direct shopping for a wide range of finished products, take a browse on our website for further details.

# Accessories

Check the accessories before using this unit.

**Battery pack**
CGA-DU12



**AV/S cable**
K2KZ9CB00001



**AC adaptor**
VSK0651B
(DE-974GB)



**Disc cleaning cloth**
VFC3778-2



**DC cable**
K2GJ2DC00011



**AC cable**
K2CT3CA00004
(RJA0053-3X)



### Optional accessories

| | |
|---|---|
| AC adaptor (VW-AD11EB) | MC protector (VW-LMC30E) |
| Battery pack (lithium/CGA-DU12/1150 mAh) | Tripod (VW-CT45E) |
| Battery pack (lithium/CGA-DU14/1360 mAh) | 8 cm DVD-RAM disc (single sided/LM-AF30E) |
| Battery pack (lithium/CGA-DU21/2040 mAh) | 8 cm DVD-RAM disc (double sided/LM-AF60E) |
| Wide conversion lens (VW-LW3007E) | 8 cm DVD-RW disc (single sided/LM-RW30E) |
| Tele conversion lens (VW-LT3014E) | 8 cm DVD-RW disc (double sided/LM-RW60E) |
| ND filter (VW-LND30E) | 8 cm DVD-R disc (single sided/LM-RF30E) |
| USB cable (K1HA05CD0010) | Shoulder strap (VFC3506-1A) |
| DVD Movie Album SE4 (VW-DTD10E) | |

- Some optional accessories may not be available in some countries.





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# Parts identification and handling

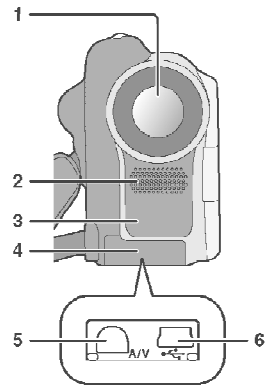
1 **Lens**
2 **Microphone (built-in, stereo)**
3 **White balance sensor (➜ 60)**
4 **Terminal cover**
5 **Audio-video output terminal [A/V] (➜ 90, 93)**
6 **USB terminal [⇜] (➜ 94)**
- When you are operating this unit with a computer, we recommend an operating environment less than approximately 30 °C and an operating time of approximately 30 minutes.

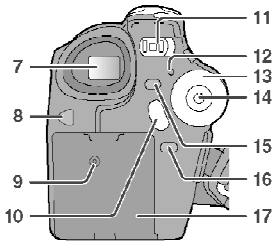
7 **Viewfinder (➜ 13, 37)**

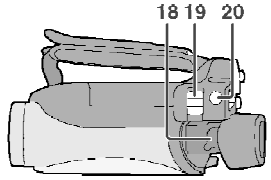
> Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the viewfinder screen. However, this is not a malfunction and does not affect the recorded picture.

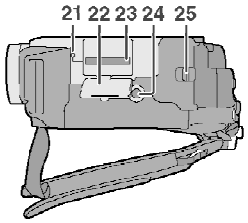
8 **LCD monitor open button [PUSH OPEN] (➜ 13)**
9 **DC input terminal [DC/C.C. IN] (➜ 22)**
10 **Recording start/stop button (➜ 39)**
11 **Power switch [OFF/ON] (➜ 23)**
12 **Status indicator (➜ 23)**
13 **Mode dial (➜ 27)**
14 **Joystick (➜ 28)**
- Move up, down, left or right to select items.
- Press the centre to enter the selection.

15 **Delete button [🗑] (➜ 67, 78, 80)**
16 **Menu button [MENU] (➜ 33)**
17 **Battery holder (➜ 20)**
18 **Eyepiece corrector knob (➜ 37)**
19 **Zoom lever [W/T] (➜ 44)**
**Volume lever [−VOLUME+] (➜ 63)**
20 **Photo shot button [PHOTO SHOT] (VDR-D150 only) (➜ 42)**
21 **Card access lamp (VDR-D150 only) (➜ 26)**
22 **Card slot cover (VDR-D150 only) (➜ 26)**
23 **Card slot (VDR-D150 only) (➜ 26)**
24 **Tripod receptacle (➜ 12)**
25 **Battery release lever [BATTERY RELEASE] (➜ 20)**





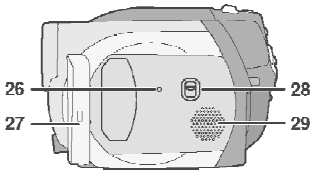




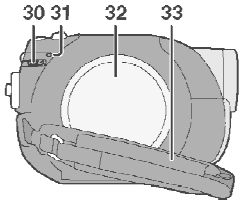

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**26 Reset button [RESET] (➜ 109)**
**27 LCD monitor (➜ 13)**

> Due to limitations in LCD production technology, there may be some tiny bright or dark spots on the LCD monitor screen. However, this is not a malfunction and does not affect the recorded picture.




**28 Mode select switch [AUTO/MANUAL/FOCUS] (➜ 56)**
**29 Speaker**
**30 Disc eject lever [DISC EJECT] (➜ 24)**
**31 Disc access lamp [ACCESS/PC] (➜ 24)**
**32 Disc compartment (➜ 24)**
**33 Grip belt (➜ below)**

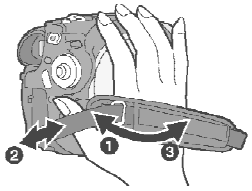



## Using grip belt

Adjust the belt length so it fits your hand.

**Adjust the belt length and the pad position.**

❶ Flip the belt.
❷ Adjust the length.
❸ Fix the belt.







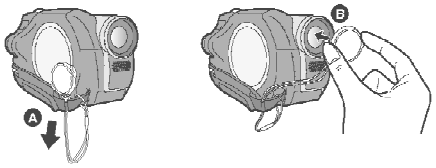



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## Fitting the lens cap

Fit the lens cap to protect the surface of the lens.
The lens cap and lens cap cord comes preattached to the grip belt.

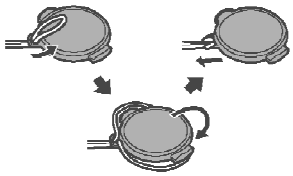
- When not using the lens cap, pull the lens cap cord in the direction of the arrow. Ⓐ
- When you are not recording, be sure to cover the lens with the lens cap for protection. Ⓑ




- When you remove the lens cap, press the knobs firmly.



- If the lens cap cord has come off
  Pass the end of the lens cap cord through the attached eye on the lens cap. Then pass the lens cap through the loop made by itself and pull tight.

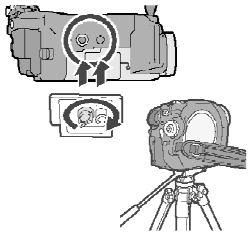




## Tripod receptacle

This is a hole for attaching the unit to the optional tripod.
(Please carefully read the operating instructions for how to attach the tripod to the unit.)

- When the tripod is used, the card slot cover cannot be opened. Insert an SD card before attaching this unit to the tripod. (➜ 26)







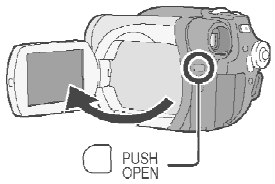
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## Using the LCD monitor

You can record the image while viewing it on the LCD monitor.

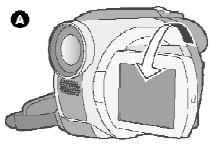
**1 Press the PUSH OPEN button. The LCD monitor opens slightly.**
**Pull the LCD monitor out in the direction of the arrow.**

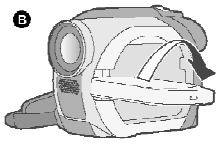
- The viewfinder is now deactivated.
- It can open up to 90°.




**2 Adjust the angle of the LCD monitor according to your preference.**

- It can rotate up to 180° Ⓐ towards the lens or 90° Ⓑ towards the viewfinder.

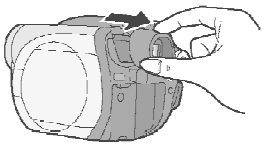



- The brightness and colour level of the LCD monitor can be adjusted from the menu. (➔ 37)
- If it is forcibly opened or rotated, the unit may be damaged or fail.
- When the LCD monitor is rotated by 180° towards the lens (when recording yourself), the LCD monitor and the viewfinder will be simultaneously activated.

## Using the viewfinder

**Pull out the viewfinder until it clicks.**
(➔ 37, Adjusting viewfinder)









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# Discs and cards

## Discs that can be used on this unit

| Disc type | DVD-RAM 8 cm Single sided/ double sided | DVD-RW 8 cm Single sided/double sided | | DVD-R 8 cm Single sided/ double sided |
|---|---|---|---|---|
| | (DVD-RAM Ver. 2.1) | [DVD-RW Ver. 1.1/ 2X-SPEED (2X/1X)] | | (DVD-R for General Ver. 2.0) |
| **Recording format** | DVD Video Recording format (VR format) | DVD Video Recording format (VR format) | DVD-Video format (Video format) | DVD-Video format (Video format) |
| **Characteristic** | Rewritable disc | Rewritable disc | One time recording disc*1 | One time recording disc |
| **Display on the screen** | | | | |
| **Indication in these instructions** | -RAM | -RW(VR) | -RW(V) | -R |
| **Functions** | | | | |
| • Editing on this unit | ● | ● | – | – |
| • Playback on other products*2 | ●*3 | ●*4 | ●*5 | ●*5 |
| • Recording after finalizing | – | ● | ●*6 | – |

●: available –: not available

*1 By formatting the disc, it can be used repeatedly. (➜ 84)
*2 DVD players and DVD recorders that support 8 cm discs.
*3 Playback is possible on compatible products.
*4 Playback is possible on compatible products. (May have to be finalized on this unit.)
*5 Must be finalized on this unit. (➜ 86)
*6 Un-finalize the disc. (➜ 87)







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- **Still pictures cannot be recorded on a disc with this unit.**
- When using double sided disc, you cannot record or play continuously from one side of the disc to the other. You will need to eject the disc and turn it over.
- Discs inserted in a holder, cartridge, or caddy case cannot be used. Always remove bare discs from these containers prior to use.
- It is recommended that you use Panasonic discs. Usually discs compatible with the DVD standard can be used for recording and playback with no problems. However, some commercially available discs do not meet the DVD standard for quality and performance. If you use one of these discs, you may not be able to record or playback normally. (The message "FOR BEST PERFORMANCE PANASONIC DISC IS RECOMMENDED." appears.) Refer to the following support site for information about discs that have been confirmed as compatible by Panasonic. http://panasonic.co.jp/pavc/global/cs/e_cam (This website is in English only.)
- Discs recorded on this unit may not be playable on other products.
- Recording on DVD-R in DVD Video Recording format is not supported.
- When using DVD-RW or DVD-R, do not perform the following, as doing so may make the disc unusable.
  - Record on a disc with other products after recording on it with this unit.
  - Record on a disc with this unit after recording on it with other products.
  - Insert an un-finalized disc in any other products.

### ■ About format types

| **What is the DVD Video Recording format (VR format)?** | **What is the DVD-Video format (Video format)?** |
|---|---|
| This is a format for recording on DVD discs which allows you to record and erase repeatedly and create playlists. You can record on DVD-RAM and DVD-RW in DVD Video Recording format with this unit. | By finalizing the disc, it can be played back on most DVD players. You can record on DVD-RW and DVD-R in DVD-Video format with this unit. |

### ■ Examples of discs that cannot be used on this unit

- DVD-RAM (2.6 GB) Ver. 1.0
- DVD-R (3.9 GB) Ver. 1.0
- DVD-R (4.7 GB) for Authoring Ver. 2.0
- I RW
- I R
- DVD-R DL
- Discs other than those with diameter of 8 cm
- Dual/double layer discs
- DVD-ROM
- DVD-Video
- CD-R
- CD-RW
- CD
- LD
- MO
- MD
- iD
- Floppy disk
- CD-ROM







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## When using brand-new DVD-RW

When using DVD-RW, select whether to record in DVD Video Recording format (VR format) or DVD-Video format (Video format) and then format the disc. (➜ 15, About format types)

**1 When a brand-new DVD-RW is inserted in this unit, the screen on the right appears. Select [YES], then press the joystick.**




**2 Select format type, then press the joystick.**

**VIDEO:** DVD-Video format
**VR:** DVD Video Recording format




**3 When the confirm screen appears, select [YES], then press the joystick.**

- To change the format type, format the disc again. (➜ 84)
  If the disc is formatted, then all the data recorded on the disc will be erased.





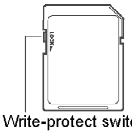


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## Cards that you can use with this unit (VDR-D150 only)

| Card type | SD Memory Card |
|---|---|
| Capacity | 8 MB, 16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB (Maximum) |
| Indication in these instructions | SD |

- **Motion pictures cannot be recorded on an SD card with this unit.**
- Please confirm the latest information on the following website. (This website is in English only.)
  **http://panasonic.co.jp/pavc/global/cs/e_cam**
- For the purposes of these operating instructions, SD Memory Card and miniSD™ Card are referred to as the "SD card".
- This unit supports SD cards formatted in FAT12 system and FAT16 system based on SD Memory Card Specifications.
- Use this unit to format SD cards. If an SD card is formatted on other products (such as a computer), the time spent for recording may become longer and you may not be able to use the SD card. (➜ 85)
- We recommend that you use a Panasonic brand SD card.
- Be sure to insert miniSD™ Cards in the dedicated card adaptor before use. Inserting a card in this unit without the adaptor may damage the unit or the card.
- Do not insert an empty card adaptor in this unit. Do not leave the adaptor in this unit while inserting or removing miniSD™ Cards. This may cause the unit to malfunction.
- When the write-protect switch on SD Memory Card is locked, no recording, deletion or editing will be possible on the card.


Write-protect switch


Locked status

- Keep the memory card out of reach of children to prevent swallowing.
- A MultiMediaCard cannot be used on this unit.







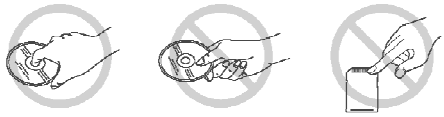
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*Discs and cards*

## Disc and card handling

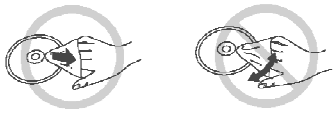
■ **How to hold a disc or card**

Do not touch the recorded surface or the terminal surface.



■ **If there is dirt on the disc**

Clean it with the supplied disc cleaning cloth. Wipe the disc from the centre to the outer edge to remove the dirt. Do not use force when wiping the disc as it may scratch it. Also, do not use solvents (thinner, water, antistatic agent, detergent etc.).



Before using

■ **Handling precautions**

- Be careful about scratches and dirt.
- Do not attach labels or stickers to discs.
  (This may cause disc warping and un-balanced rotation, rendering it unusable.)
- Write on the label side of the disc only with a soft, oil-based felt pen. Do not use ballpoint pens or other hard writing implements.
- Do not use record cleaning sprays, benzine, thinner, static electricity prevention liquids or any other solvent.
- Do not use scratch-proof protectors or covers.
- Do not expose the terminals of the card to water, garbage or dust.
- Do not drop, stack, or impact discs. Do not place objects on them.
- Do not use the following discs:
  – Discs with exposed adhesive from removed stickers or labels.
  – Discs that are badly warped or cracked.
  – Irregularly shaped discs, such as heart shapes.



- Do not place in the following areas:
  – In direct sunlight.
  – In very dusty or humid areas.
  – Near a heater.
  – Locations susceptible to significant difference in temperature (condensation can occur).
  – Where static electricity or electromagnetic waves occur.
- To protect discs and cards, return them to their cases when you are not using them.



# 6. Service Mode

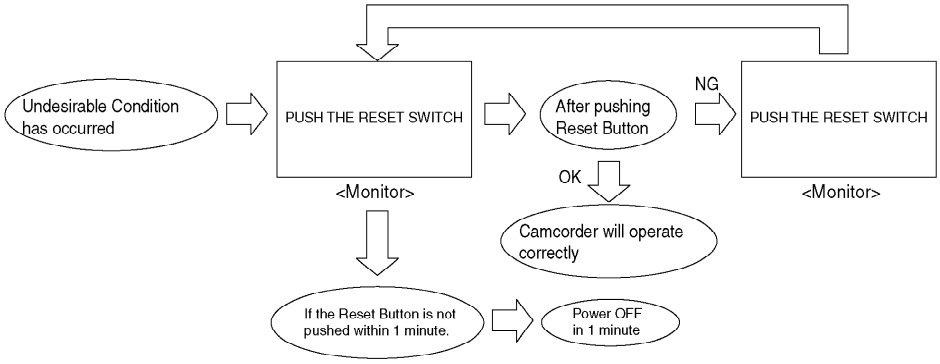
## 6.1. Error Display

**"PUSH THE RESET SWITCH" is displayed automatically on the EVF or the LCD Monitor when an undesirable condition has occurred.**

**Fig. 1**



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**Note:**

**When "PUSH THE RESET SWITCH" is displayed repeatedly, service is required. Check the Error Code which is listed in the Service Menu.**

## 6.2. Service Menu

**When abnormal detection contents are confirmed, do the following operation. Automatic diagnosis code will bedisplayed. (Service Menu)**

**To enter the Service Menu**

**Push the [DELETE], [JOYSTICK CONTROL LEFT] and [RECORDING START/STOP] simultaneously for 3 seconds (with no SD Card inserted).**

**Note:**

**If a Disc or SD Card is inserted, the above operation will not work. This operation displays the following Service Menu items.**

**To select the Item**

1. **Set to Service Menu.**
2. **Press the [JOYSTICK CONTROL UP/DOWN] to select item [1], [2], [3], [4] or [5].**
3. **Press the [JOYSTICK CONTROL RIGHT] to display [YES/NO] screen.**
4. **Press the [JOYSTICK CONTROL UP/DOWN] to select [YES].**
5. **Press the [JOYSTICK CONTROL CENTER].**

**Note:**

**Only perform items 1, 2, 3, 4 and 5 in the Service Menu.**

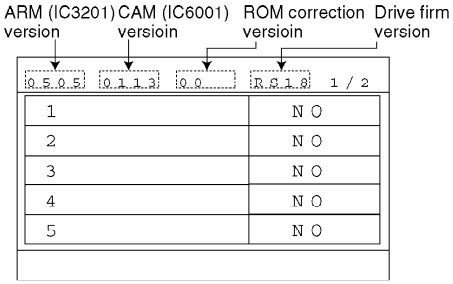
**To exit the Service Menu**

**Unplug the AC Cord.**

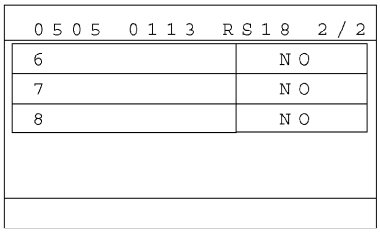
**Fig. 2**



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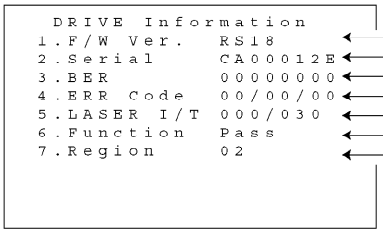

<Service Menu 1/2>




<Service Menu 2/2>

Item [1]: Factory setting (reset)
Item [2]: Drive information
Item [3]: Reset the total elapsed power on time
Item [4]: LD temperature information
Item [5]: Error/Lock Code/elapsed time

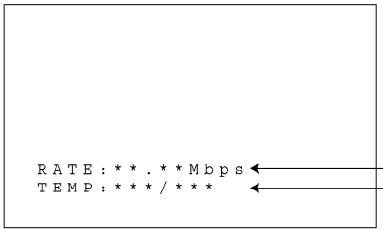
Item [6]: AD 24ch data
Item [7]: Life Mode
Item [8]: Not used
} ignore




1. Dirve firmware version
2. Drive Serial No.
3. Number of times of ECC Error revision
4. Error record
5. Laser current/LD temperature
6. Test result of factory
7. Region code

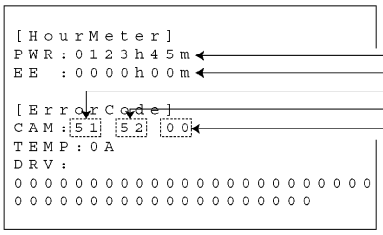
**Note:**
If 4. ERR Code is "04/**/**", replace the DVD Drive Frame Unit.

<Itme [2] screen>




Recording bit rate
LD temperature (current)/LD temperature (MAX)

<Itme [4] screen>




Total elapsed power on time
**ignore**
The number before previous
Previous number
Latest number
**ignore**

Camera Error cord record in hexidecimal

| Display | Explanation of cause |
|---|---|
| 00 | No error |
| 51 | Zoom Motor Lock |
| 52 | Focus Motor Lock |

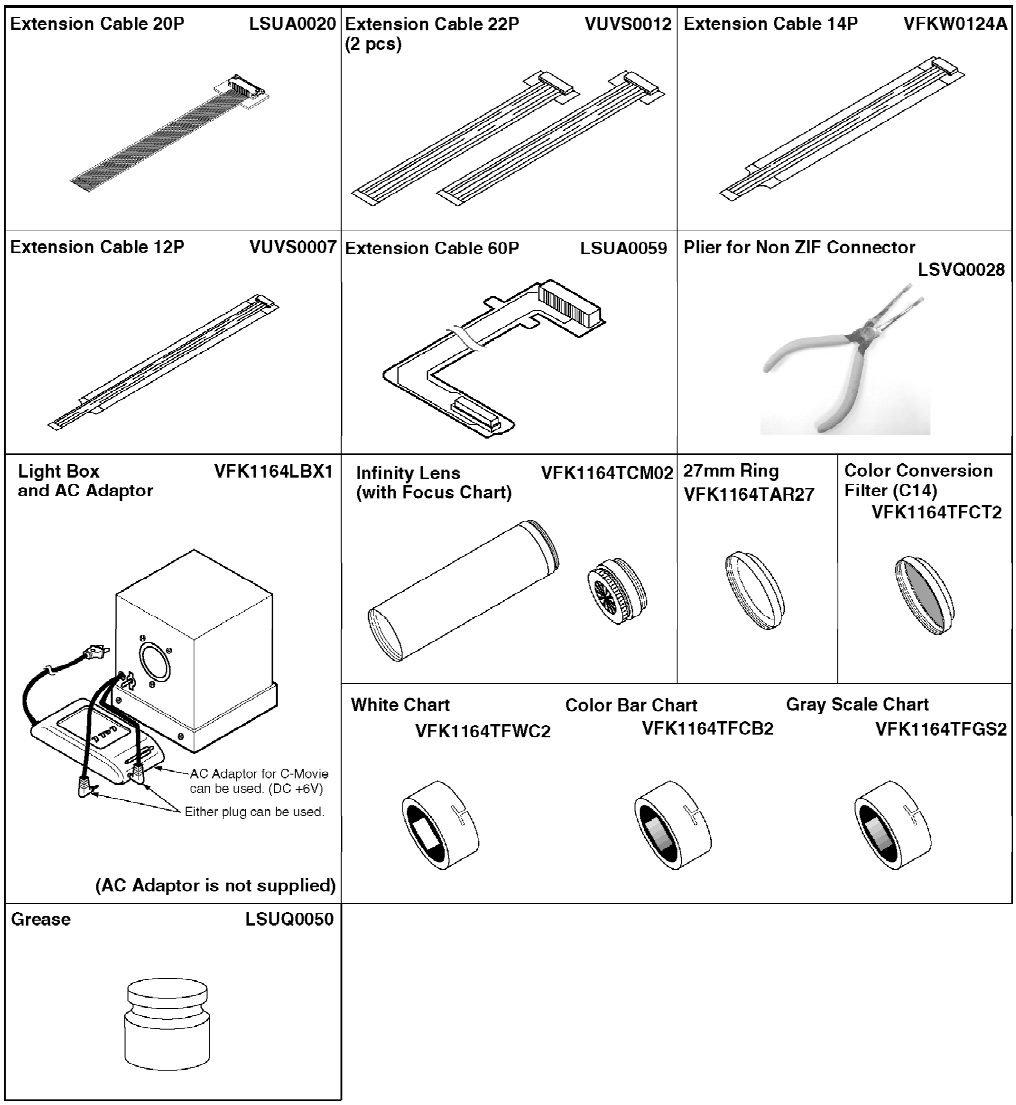
<Itme [5] screen>

# 7. Service Fixture & Tools

## 7.1. Service Fixture and Tools



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## 7.2. Service Position

### 7.2.1. Extension Cables for Service Position

**Using the following Extension Cables, place the unit as shown for check and service.**

| NO. | PART NUMBER | PART NAME | CONNECTION |
|---|---|---|---|
| ① | LSUA0020 | 20Pin Extension Cable | FP3 on Main P.C.B. ~ Zoom Switch F.P.C. of Side L/Disk Unit |
| ② | VUVS0012 | 22Pin Extension Cable | FP701 on Main P.C.B. ~ Lens F.P.C. on Lens Unit |
| ③ | VFKW0124A | 14Pin Extension Cable | FP301 on Main P.C.B. ~ CCD F.P.C. on Lens Unit |
| ④ | VUVS0007 | 12Pin Extension Cable | FP2 on Main P.C.B. ~ Front F.P.C. of Front P.C.B. |
| ⑤ | VUVS0012 | 22Pin Extension Cable | FP1 on Main P.C.B. ~ Side R F.P.C. of Side R P.C.B. |
| ⑥ | LSUA0059 | 60Pin Extension Cable | B1 on Main P.C.B. ~ Connector of DVD Drive Frame Unit |

**Note :**

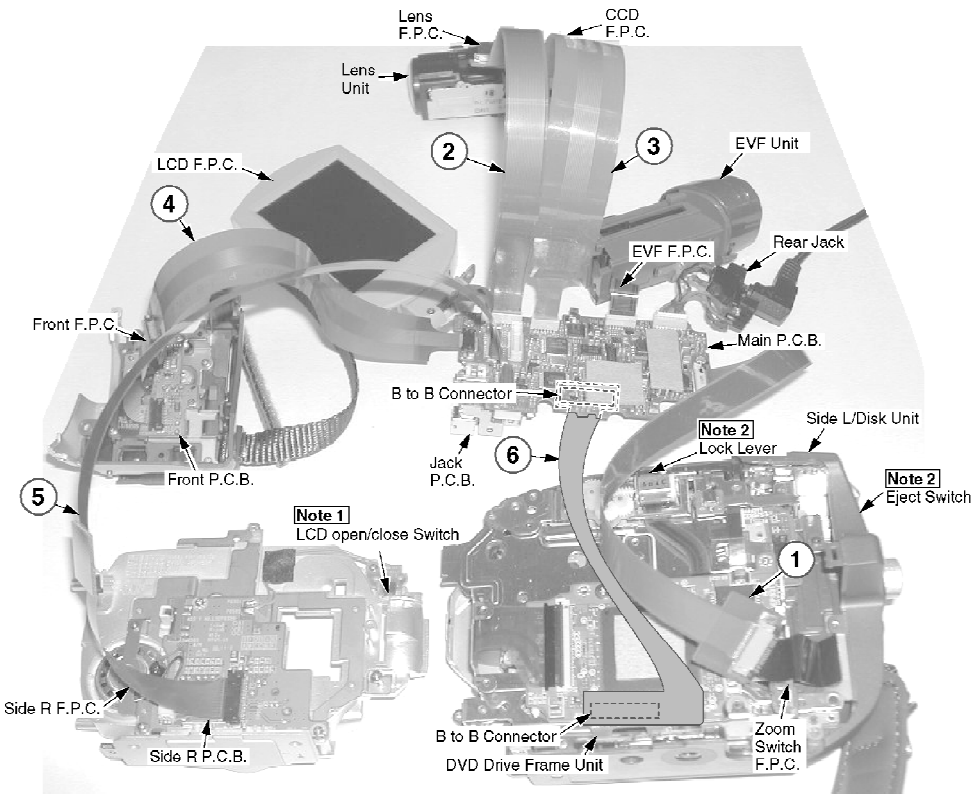
**1. The LCD open/close Switch is for changing between LCD Display or EVF Display. When turning on EVF Display, place some paper or tape, etc. on LCD open/close Switch so that this Switch stays ON.**

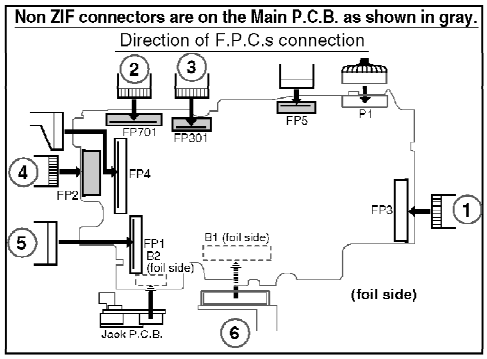


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2. **To eject the DVD manually, slide the Lock lever on the Disc Cover Lock Unit for a short time.**
3. **Use a grounded ESD wrist strap while disassembling the Lens portion.**
4. **Connect the F.P.C.s to the connectors, verifying the direction of F.P.C.s as shown.**
5. **Use extreme care when plugging in or unplugging connectors.**

**Fig. 3**




## 7.3. Removal/Installation of F.P.C. From Non ZIF (Zero Insertion



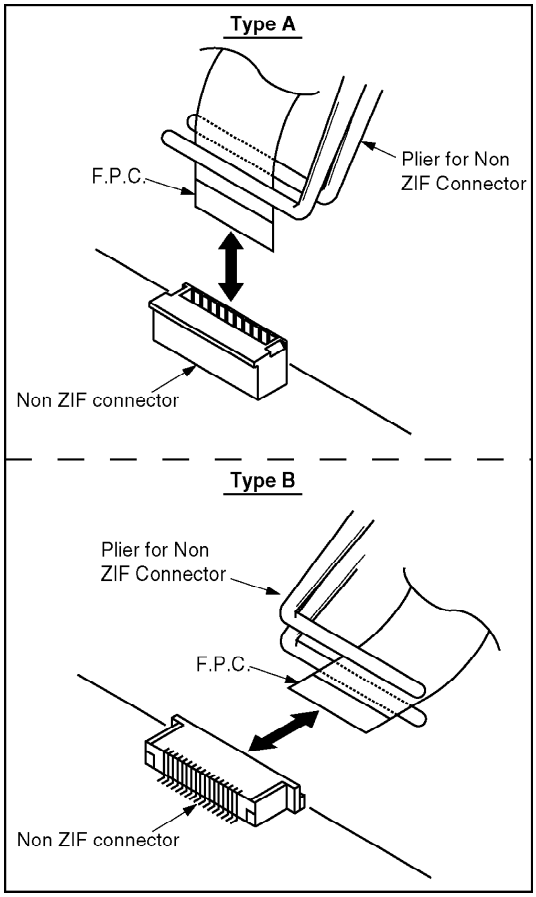
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## Force) Connector

**Removal/Installation of F.P.C. from the Non ZIF (Zero Insertion Force) connector:**

1. **The Non ZIF connectors and the ZIF connectors are used on the unit. And there are 2 types (Type A, Type B) of Non ZIF connectors.**
2. **To remove the F.P.C. from the Non ZIF connector, use the Plier for Non ZIF Connector (LSVQ0028) to pull out the F.P.C. as shown. The same Plier for Non ZIF Connector (LSVQ0028) should also be used to install the F.P.C. to the Non ZIF Connector.**

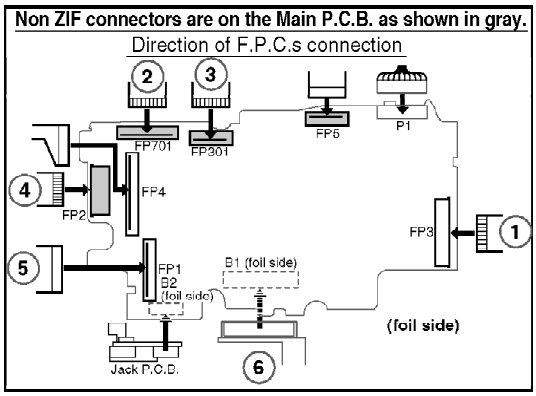
**Fig. 4-1**




3. **Connect the F.P.C.s to the Non ZIF connectors, verifying the direction of F.P.C as shown.**



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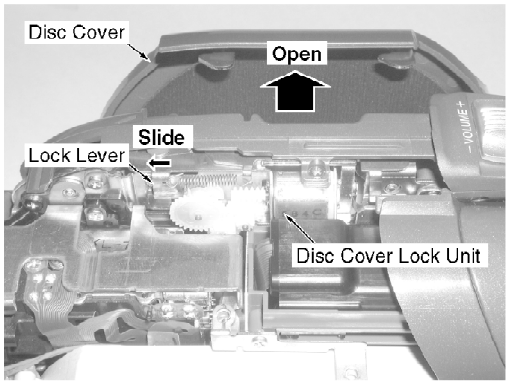



## 7.4. Method for Ejecting the DVD Tray Manually

**Perform the following procedures;**

1. **Remove the 6 Screws, and remove the Top Cover Unit. (Refer to "Disassembly and Assembly Instructions.")**
2. **Slide the Lock Lever to open the Disc Cover.**
3. **Remove the Disc.**

**Fig. 5**




## 7.5. EEPROM Data

**CAUTION:**

**Be sure to save the EEPROM data using PC-EVR Adjustment Program before service and adjustment in order to make sure to avoid an accidental data loss, etc. using PC-EVR Adjustment Program by first.**

EEPROM IC

| C.B.A. | EEPROM IC Ref. No. |
|---|---|
| Main C.B.A. | IC6004 |

## 7.6. Special Note

**All integrated circuits and many other semiconductor devices are electrostatically sensitive and therefore require the special handlings techniques described under the "ELECTROSTATICALLY**



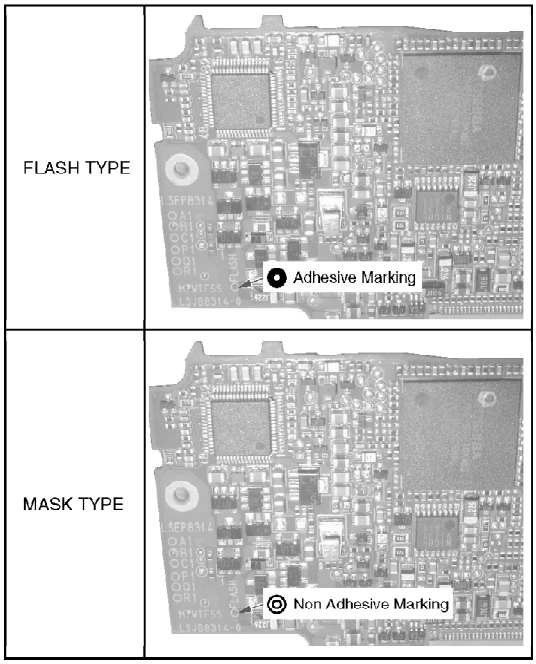
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**SENSITIVE (ES) DEVICES" section of this service manual.**

## 7.7. IC6001 REPLACEMENT NOTE

**Two types of IC6001 (FLASH or MASK) are used on a running change basis, however MASK TYPE of IC6001 is supplied only as a replacement part.**

Types of IC6001




**Perform the addtion (R6010 and R6029) and also deletion (R6009 and R6030) of the following part simultaneously, when exchanging from the "FLASH TYPE" to the "MASK TYPE" of IC6001.**

| | FLASH TYPE | MASK TYPE | |
|---|---|---|---|
| Ref No. | Part No. | Part No. | Part Name |
| IC6001 | - - - - - - - - - - | C2DBLK000122 | IC |
| R6009 | ERJ3GEY0R00V | - - - - - - - - - - | Resistor |
| R6010 | - - - - - - - - - - | ERJ3GEY0R00V | Resistor |
| R6029 | - - - - - - - - - - | ERJ3GEY0R00V | Resistor |
| R6030 | ERJ3GEY0R00V | - - - - - - - - - - | Resistor |

# 8. Disassembly and Assembly Instructions

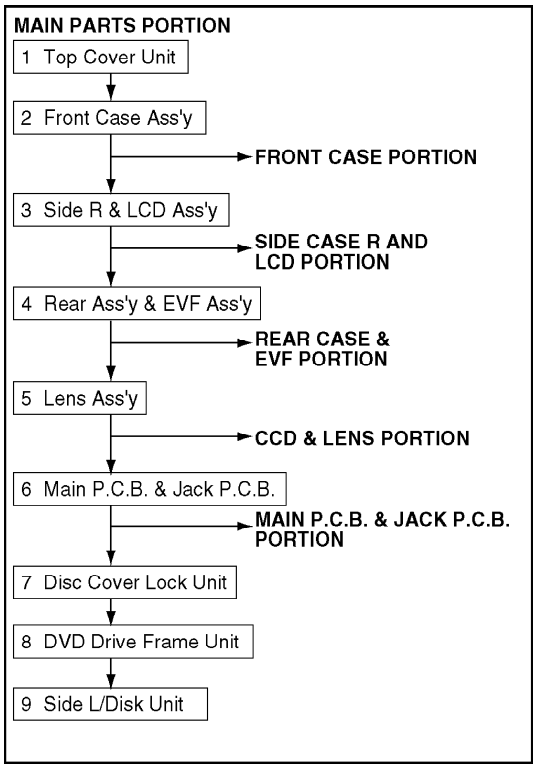
## 8.1. Cabinet Section

### 8.1.1. DISASSEMBLY FLOWCHART

**This flow chart indicates the disassembly steps of the cabinet parts and the P.C.Boards in order to gain access to item (s) to be serviced. When reassembling, perform the step (s) in the reverse order. Bend, route and dress the wires as they were originally.**



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**Note :**

1. **When removing the cabinet, work with care so as not to break the Locking Tabs.**
2. **Place a cloth or some other soft material under the P.C. Boards or Unit to prevent damage.**
3. **When reinstalling, ensure that the connectors are connected and electrical components have not been damaged.**
4. **Do not supply power to the unit during disassembly and reassembly.**

### 8.1.2. Disassembly Method

# 9. Measurements and Adjustments

## 9.1. Electrical Adustment

### 9.1.1. Initial Guideline

**The table below shows which adjustments are necessary according to the unit parts and individual parts to be replaced. Make sure to perform these adjustments shown below as necessary.**



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| Adjustment Item \ Replacement Parts | | MAIN P.C.B. | IC501 (CAMERA SIGNAL PROCESS) | IC701 (FOCUS/ZOOM MOTOR DRIVE & IRIS/HALL AMP CONTROL) | IC3001 (CAMERA DIGITAL SIGNAL PROCESS/SHUFFLING) | IC3301 (VIDEO/AUDIO SIGNAL PROCESS) | IC6001 (SYSTEM MICROCONTROLLER) | IC6004 (EEPROM) | IC3201 (Flash Memory) | IC8001(LCD RGB /EVF SIGNAL PROCESS) | CCD P.C.B. | LENS UNIT |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Camera | CAM hall amplifier and Iris PWM | ◯ | | ◯ | | | ◯ | ◯ | | | | |
| | CAM Zoom Tracking and De-focus | ◯ | | | | | | ◯ | | | | ◯ |
| | CAM WB coarse | ◯ | ◯ | | ◯ | | | ◯ | | | ◯ | |
| | CAM AWB 3100 | ◯ | ◯ | | ◯ | | | ◯ | | | ◯ | |
| | CAM AWB 5100 | ◯ | ◯ | | ◯ | | | ◯ | | | ◯ | |
| | CAM Revision CCD scrach | ◯ | | | | | | ◯ | | | ◯ | |
| Video | Luminance level | ◯ | | | ◯ | ◯ | | ◯ | | | | |
| LCD | LCD Contrast | | | | | | | ◯ | | ◯ | | |
| | LCD Bright | | | | | | | ◯ | | ◯ | | |
| | LCD Sub Bright | | | | | | | ◯ | | ◯ | | |
| | LCD VCOM level | | | | | | | ◯ | | ◯ | | |
| EVF | EVF Horizontal free running | | | | | | | ◯ | | ◯ | | |
| | EVF Contrast | | | | | | | ◯ | | ◯ | | |
| | EVF Bright | | | | | | | ◯ | | ◯ | | |
| | EVF Sub Bright | | | | | | | ◯ | | ◯ | | |
| | EVF VCOM leve | | | | | | | ◯ | | ◯ | | |

**Note:** ◯ : Adjustment Item

### 9.1.2. Installation of USB-SERIAL driver

**Execute the "Setup.exe" file in "ComMass" folder by double clicking to install the USB-SERIAL driver.**

### 9.1.3. COM Mode

**If a Disc or SD Card is inserted, remove before operation.**
**To enter the PC connection (COM) mode, push the [DELETE], [RECORDING START/STOP] and [JOYSTICK CONTROL UP] simultaneously for 3 seconds without connecting the USB Cable.**



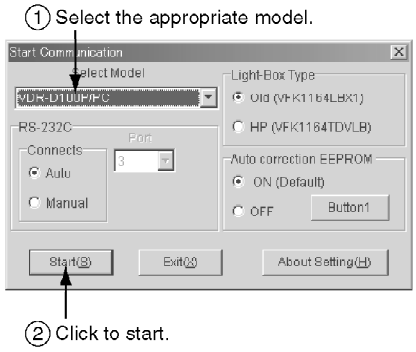
<LCD Monitor>

### 9.1.4. Set up of PC-EVR Adjustment Program



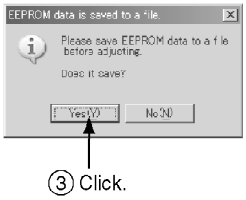
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1. **Turn on the PC and install the PC-EVR Adjustment Program into the PC.**
2. **Execute the "kdr2006.exe" file by double clicking to start up the PC-EVR Adjustment Program.**
   **The main menu will be displayed.**
3. **Select the appropriate model.**
4. **Turn on the camcorder and set to PC connection (COM) mode. Then click "Start".**




5. **When the communication is complete, the dialog will appear. Click "Yes," and "Save" to save the EEPROM data.**

**Fig. E2-2**

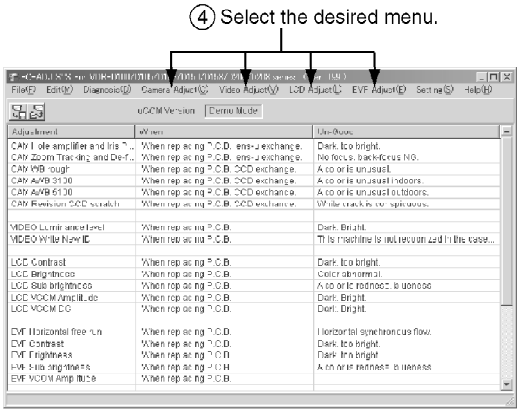



6. **When saving EEPROM data is complete, the menu will appear. To perform each adjustment, display the adjustment menu by selecting from "Camera Adjust," "Vcr Adjust," "LCD Adjust" or "EVF Adjust" and select each adjustment item.**

**Fig. E2-3**



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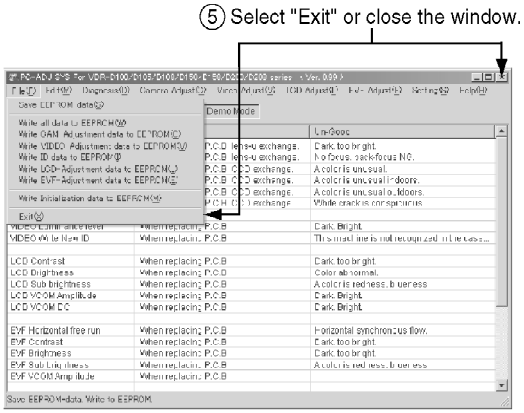



**Note:**

**The adjusted data is stored in the EEPROM IC after each adjustment.**

**7. After adjustment, to close the software, select "Exit" in the File menu or close the window.**

**Fig. E2-4**




**8. To release the PC connection (COM) mode, push the [DELETE], [RECORDING START/STOP] an [JOYSTICK CONTROL UP] simultaneously for 3 seconds without connecting the USB Cable.**

# 10. Maintenance

## 10.1. Cleaning Lens, Viewfinder and LCD Panel

**Do not touch the surface of the lens, Viewfinder and LCD Panel with your hand.**
**When cleaning the lens, use air-blower to blow off the dust.**
**When cleaning the LCD Panel, dampen the lens cleaning paper with lens cleaner, and gently wipe the surface.**

**Note:**

**Lens cleaning paper and lens cleaner are available at camera shops, etc.**



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## 10.2. Cleaning disc and optical pickup

**Do not spray insecticides or volatile chemicals onto the unit.**
If the unit is sprayed with such chemicals, its body may be marred and the surface finish may peel off.
Do not leave rubber or plastic products in contact with the unit for a long time.

**When you use the unit in a sandy or dusty place such as a beach, do not let sand or fine dust get into the body and terminals of the unit.**
**Also, keep the unit away from sea water.**
Sand or dust may damage the unit. (Care should be taken when inserting and removing a disc or a card.)
If sea water splashes onto the unit, wipe off the water with a well wrung cloth. Then wipe the unit again with a dry cloth.

**When carrying the unit, do not drop or bump it.**
A strong impact can break the unit's casing, causing it to malfunction.

**Do not use benzine, paint thinner or alcohol for cleaning the unit.**
Before cleaning, detach the battery or pull out the AC cable from the AC outlet.
The camera body may be discolored and the surface finish may peel off.
Wipe the unit with a soft dry cloth to remove dust and fingerprints. To remove stubborn stains, thoroughly wring a cloth that has been soaked in a neutral detergent diluted with water and wipe the unit with it. Afterwards, wipe it with a dry cloth.
When you use a chemical dust cloth, follow the instructions that came with the cloth.

**Do not use a commercial available 8 cm (3 z) CD lens cleaner.**
Using 8 cm (3 z) CD lens cleaner could cause this unit to malfunction.

# 11. Block Diagrams

# 12. Schematic Diagrams

## 12.1. SCHEMATIC DIAGRAM & CIRCUIT BOARD LAYOUT NOTES

## 12.2. FRONT SCHEMATIC DIAGRAM

## 12.3. SIDE R SCHEMATIC DIAGRAM

## 12.4. LCD BACKLIGHT SCHEMATIC DIAGRAM

## 12.5. JACK / EVF BACKLIGHT / DISK COVER LOCK SCHEMATIC DIAGRAMS

## 12.6. CCD / LCD SW / SIDE L/DISK SCHEMATIC DIAGRAMS

## 12.7. INTERCONNECTION SCHEMATIC DIAGRAM

## 12.8. VOLTAGE CHART

# 13. Printed Circuit Board

## 13.1. FRONT P.C.B.

## 13.2. JACK P.C.B.

## 13.3. LCD BACKLIGHT P.C.B.

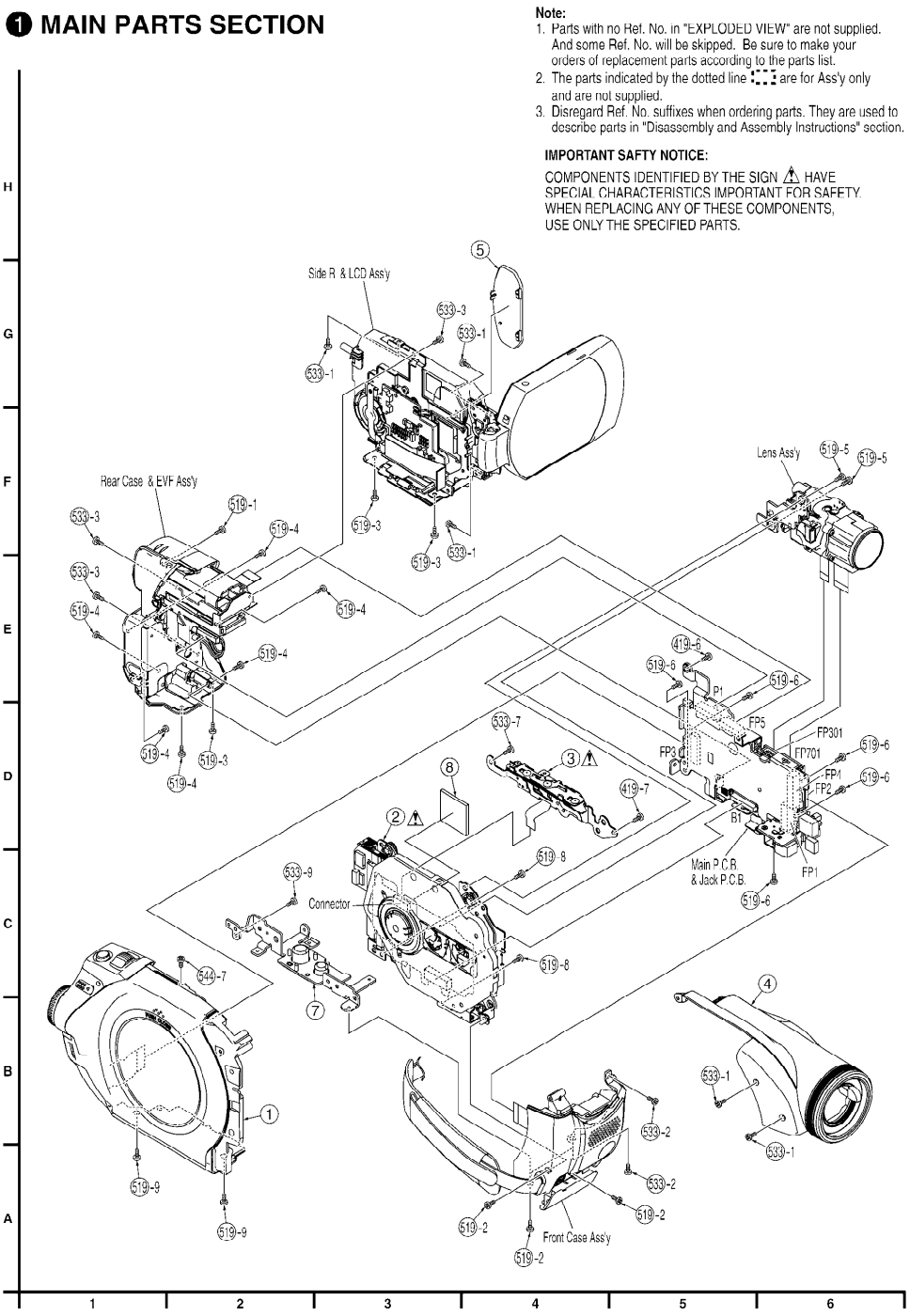
## 13.4. SIDE R P.C.B. / OPEN SWITCH P.C.B.

# 14. Exploded View

## 14.1. MAIN PARTS SECTION



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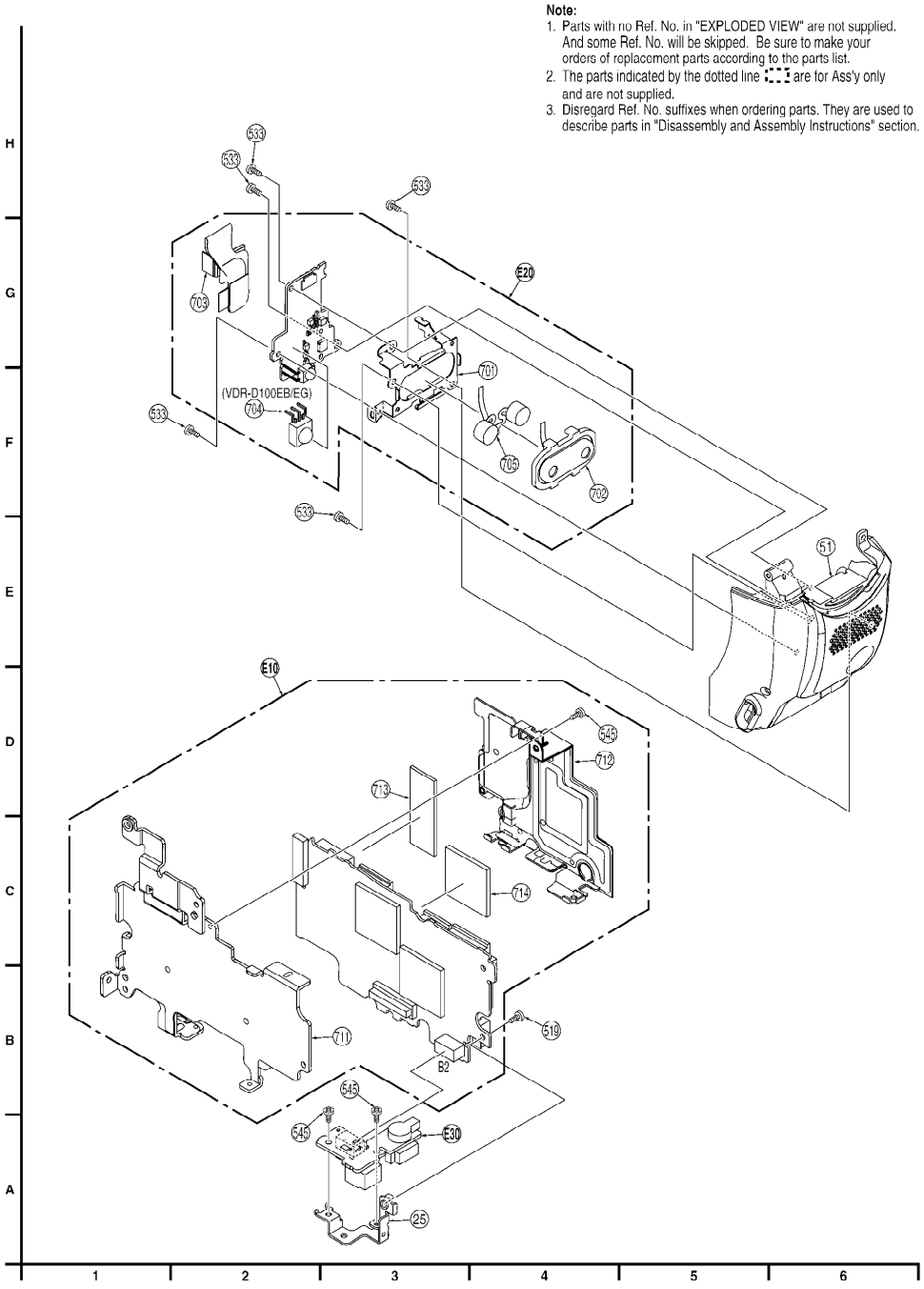



## 14.2. FRONT CASE, MAIN P.C.B. AND JACK P.C.B. SECTION



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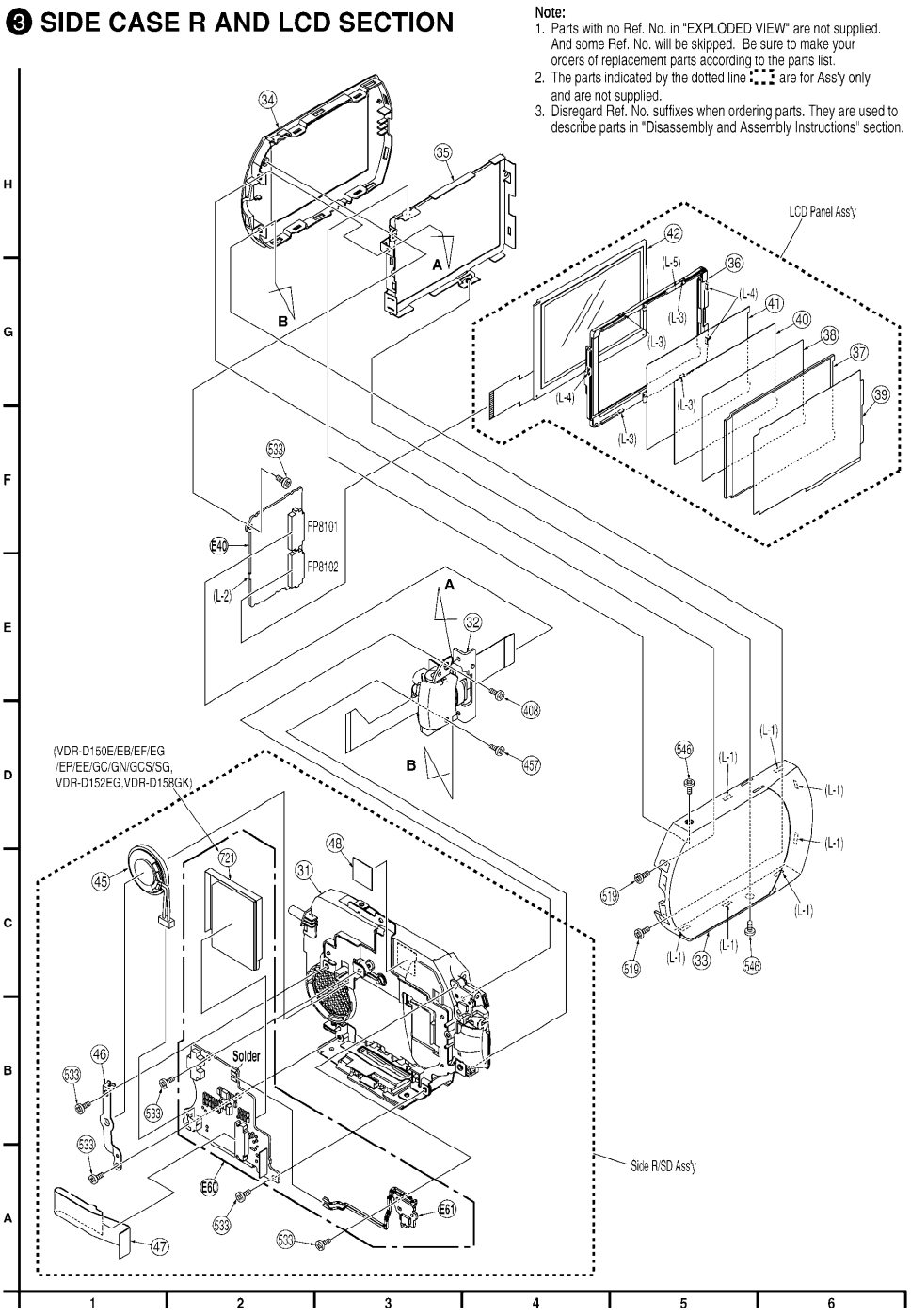
## ❷ FRONT CASE, MAIN P.C.B. AND JACK P.C.B. SECTION




## 14.3. SIDE CASE R AND LCD SECTION



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## 14.4. CCD AND LENS SECTION



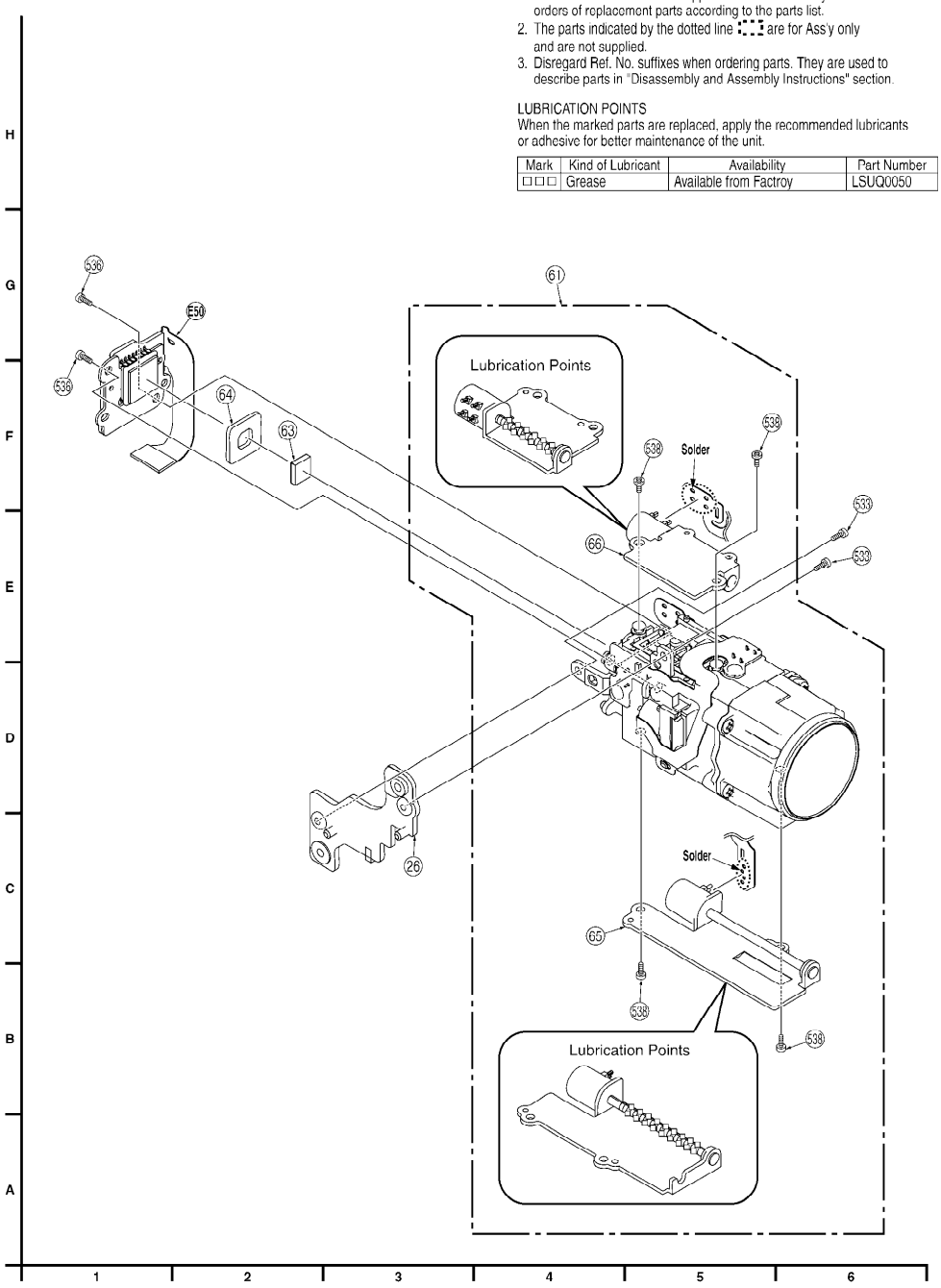
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## ❹ CCD AND LENS SECTION

**Note:**
1. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
2. The parts indicated by the dotted line ⬚ are for Ass'y only and are not supplied.
3. Disregard Ref. No. suffixes when ordering parts. They are used to describe parts in "Disassembly and Assembly Instructions" section.

LUBRICATION POINTS
When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

| Mark | Kind of Lubricant | Availability | Part Number |
|---|---|---|---|
| □□□ | Grease | Available from Factroy | LSUQ0050 |



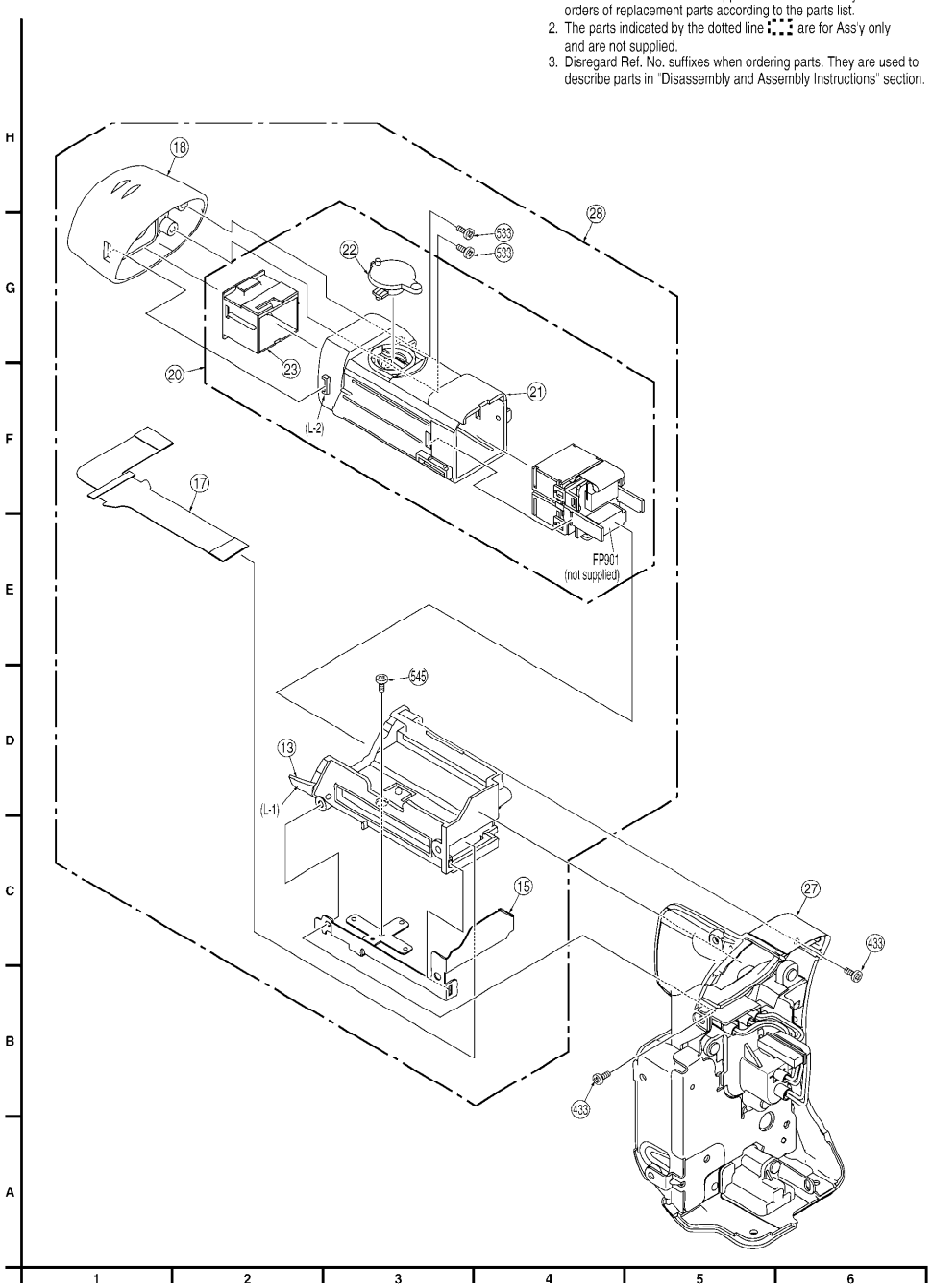

# 14.5. REAR CASE AND EVF SECTION



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## ❺ REAR CASE AND EVF SECTION

**Note:**
1. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
2. The parts indicated by the dotted line ⬚ are for Ass'y only and are not supplied.
3. Disregard Ref. No. suffixes when ordering parts. They are used to describe parts in "Disassembly and Assembly Instructions" section.

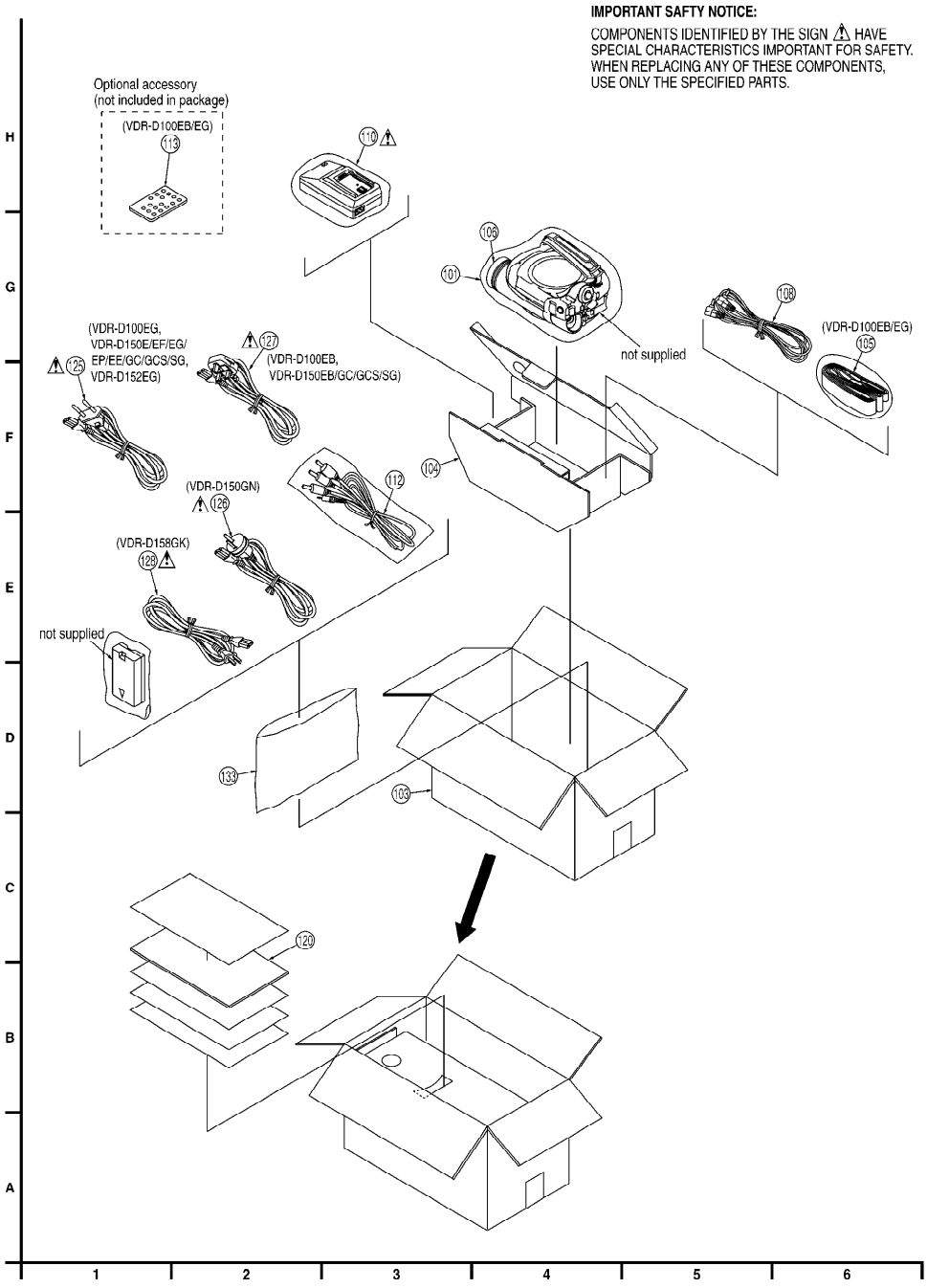



# 14.6. PACKING PARTS AND ACCESSORIES SECTION



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## ❻ PACKING PARTS AND ACCESSORIES SECTION




# 15. Replacement Parts Lists

**BEFORE REPLACING PARTS, READ THE FOLLOWING:**

**1. Use only original replacement parts:**

**To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list.**



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**2. IMPORTANT SAFETY NOTICE**
**Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.**

**3. Definition of Parts supplier:**
**A. Parts with mark "SPC" in the Remarks column are supplied from Spare Parts Center of Panasonic AVC Company.**
**B. Parts without mark in the Remarks column are supplied from PSEC.**

**4. Parts whose Ref. Nos. are the same are interchangeable as replacement parts. Any of these parts may be ordered and used as a replacement part.**

**5. Model Number Indication:**
**Model numbers are indicated in the Remarks column without "VDR -D"**

**6. Unless otherwise specified;**
**All resistors are in Ω, K = 1,000 Ω, M = 1,000 kΩ.**

**7. Abbreviation**
**RTL: Retention Time Limited**
**This indicates that the retention time is limited for this item. After the discontinuation of this item in production, it will no longer be available.**
**NR: Non Repairable Board Ass'y**
**MGF CHIP: Metal Glaze Film Chip**
**C CHIP: Ceramic Chip**
**COMPLX CMP: Complex Component**
**W FLMPRF: Wirewound Flameproof**
**P.C.B.: Circuit Board Assembly**
**P.C.B.: Printed Circuit Board**
**E.S.D.: Electrostatically Sensitive Devices**
**CSP: Chip Size Package**

**8. AC Adaptor replacement note**
**A. VSK0561 is indicated on the AC Adaptor used in the following model:**
**VDR-D158GK.**



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However, the AC Adaptor replacement part number is DE-974HA which should be used when ordering.

B. VSK0561 is indicated on AC Adaptor used in the following models:
VDR-D100EB, VDR-D100EG, VDR-D150E, VDR-D150EB, VDR-D150EE, VDR-D150EF, VDR-D150EG, VDR-D150EP, VDR-D150GC, VDR-D150GCS, VDR-D150GN, VDR-D150SG, and VDR-D152EG.
However, the AC Adaptor replacement part number is DE-974GB which should be used when ordering.

## 15.1. MECHANICAL REPLACEMENT PARTS LIST

**Definition of Parts supplier:**

1. Parts with mark "SPC" in the Remarks column are supplied from Spare Parts Center of Panasonic AVC Company.
2. Parts without mark in the Remarks column are supplied from PSEC.

**MECHANICAL REPLACEMENT PARTS**

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 1 | LSYK1817 | SIDE L/DISK UNIT | 100EB/EG |
| 1 | LSYK1803 | SIDE L/DISK UNIT | 150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,152EG,158GK |
| 2 | LMXK1931S-2 | DVD DRIVE FRAME UNIT | ⚠ 100EB/EG,150E/EB/EF/EG/EP/GC,152EG |
| 2 | LMXK1931S-5 | DVD DRIVE FRAME UNIT | ⚠ 150EE |
| 2 | LMXK1931S-4 | DVD DRIVE FRAME UNIT | ⚠ 150GN |
| 2 | LMXK1931S-3 | DVD DRIVE FRAME UNIT | ⚠ 150GCS/SG |
| 2 | LMXK1931S-6 | DVD DRIVE FRAME UNIT | ⚠ 158GK |
| 3 | LSXY1001 | DISK COVER LOCK UNIT | ⚠ |
| 4 | LSYK1638 | TOP COVER UNIT | |
| 5 | LSKF0649 | EVR COVER | |
| 7 | LSYK1620 | BOTTOM ANGLE UNIT | |
| 8 | LSSC0895 | HEAT CONDUCT SHEET | |
| 13 | LSKM1133 | EVF BASE FRAME | |
| 15 | LSSC0824 | EVF EARTH PLATE | |
| 17 | LSJB8323 | C-EVF FPC | |
| 18 | LSGQ0172 | EYE CAP | |
| 20 | LSYK1624 | EVF CASE 1 UNIT,ABS RESIN | |
| 21 | LSKM1132 | EVF CASE,ABS RESIN | |
| 22 | LSGT0611 | EYE SIGHT LEVER | |
| 23 | LSYK1626 | EVF LENS UNIT | |
| 25 | LSSC0823 | JACK ANGLE | |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 26 | LSMD0818 | LENS HOLDER | |
| 27 | LSYK1621 | REAR CASE UNIT,ABS RESIN | |
| 28 | LSYK1622 | EVF UNIT | RTL |
| 31 | LSYK1648 | SIDE CASE R UNIT,ABS RESIN | 100EB/EG |
| 31 | LSYK1631 | SIDE CASE R UNIT,ABS RESIN | 150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,152EG,158GK |
| 32 | LSYK1634 | LCD SHAFT CASE UNIT,ABS RESIN | |
| 33 | LSYK1757 | LCD CASE A UNIT,ABS RESIN | 100EB/EG |
| 33 | LSYK1805 | LCD CASE A UNIT,ABS RESIN | 150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG |
| 33 | LSYK1834 | LCD CASE A UNIT,ABS RESIN | 152EG |
| 33 | LSYK1806 | LCD CASE A UNIT,ABS RESIN | 158GK |
| 34 | LSKM1134 | LCD CASE B,ABS RESIN | |
| 35 | LSXY0933 | LCD SHIELD PLATE UNIT | |
| 36 | LSXY0934 | LCD PANEL HOLDER UNIT | |
| 37 | LSGL0422 | LEAD LIGHT PANEL | |
| 38 | LSGL0404 | DIFFUSION SHEET | |
| 39 | LSGL0423 | REFLECT SHEET | |
| 40 | LSGL0406 | BEF SHEET | |
| 41 | LSGL0421 | BEF SHEET A | |
| 42 | L5BDDYH00014 | LIQUID CRYSTAL DISPLAY PANEL | |
| 45 | L0AA02A00062 | SPEAKER | |
| 46 | LSMC0136 | SPEAKER SPRING PLATE | |
| 47 | LSJB8327 | SIDE-R FPC | |
| 48 | LSMF0372 | SHEET | |
| 51 | LSYK1662 | FRONT CASE 1 UNIT,ABS RESIN | |
| 61 | LSXN0041 | LENS UNIT | |
| 63 | VDL1390-B | OPTICAL LOW PASS FILTER | |
| 64 | VMX3282 | FILTER RUBBER | |
| 65 | L6HA66NB0005 | ZOOM MOTOR UNIT | |
| 66 | L6HA66NB0004 | FOCUS MOTOR UNIT | |
| 101 | VPF1129 | POLY BAG | |
| 103 | LSPG2115 | PACKING CASE,PAPER | 100EB/EG |
| 103 | LSPG2171 | PACKING CASE,PAPER | 150E/EB/EF/EG/EP |
| 103 | LSPG2172 | PACKING CASE,PAPER | 150EE/GC/GN/GCS/SG |
| 103 | LSPG2202 | PACKING CASE,PAPER | 152EG |
| 103 | LSPG2173 | PACKING CASE,PAPER | 158GK |
| 104 | LSPN0659 | DVD PACKING | |
| 105 | VFC3506-1A | SHOULDER STRAP | 100EB/EG |
| 106 | LSYF0552 | LENS CAP UNIT | |
| 108 | K2GJ2DC00011 | DC CABLE W/PLUG | |
| 110 | DE-974GB | AC ADAPTOR UNIT | ⚠ 100EB/EG,150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,152EG |
| 110 | DE-974HA | AC ADAPTOR UNIT | ⚠ 158GK |
| 112 | K2KZ9CB00001 | AV CABLE W/PLUG | |
| 113 | N2QAEC000019 | INFRARED REMOTE CONTROL UNIT | 100EB/EG |
| 120 | LSQT1048-A | INSTRUCTION BOOK (ENGLISH) | 100EB,150EB |
| 120 | LSQT0987-A | INSTRUCTION BOOK (GERMAN/SPANISH/ITALIAN) | 100EG |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 120 | LSQT1044-A | INSTRUCTION BOOK (PORTUGUESE/SPANISH) | 150E |
| 120 | LSQT1045-A | INSTRUCTION BOOK (SWEDISH/DANISH) | 150E |
| 120 | LSQT1043-A | INSTRUCTION BOOK (GERMAN/FRENCH) | 150EF |
| 120 | LSQT1041-A | INSTRUCTION BOOK (GERMAN/FRENCH) | 150EG,152EG |
| 120 | LSQT1042-A | INSTRUCTION BOOK (ITALIAN/DUTCH) | 150EG,152EG |
| 120 | LSQT1046-A | INSTRUCTION BOOK (ENGLISH/POLISH) | 150EP |
| 120 | LSQT1047-A | INSTRUCTION BOOK (CZECH/HANGARIAN) | 150EP |
| 120 | LSQT1051-A | INSTRUCTION BOOK (RUSSIAN/UKRAINIAN) | 150EE |
| 120 | LSQT1049-A | INSTRUCTION BOOK (ENGLISH/CHINESE TRADITIONAL) | 150GC/GCS/SG |
| 120 | LSQT1050-A | INSTRUCTION BOOK (ARABIC/PERSIAN) | 150GC/GCS/SG |
| 120 | LSQT1052-A | INSTRUCTION BOOK (ENGLISH) | 150GN |
| 120 | LSQT1053-A | INSTRUCTION BOOK (CHINESE SIMPLIFIED) | 158GK |
| 125 | K2CR2DA00004 | AC CORD W/PLUG | ⚠ 100EG,150E/EF/EG/EP/EE/GC/GCS,152EG |
| 125 | K2CR2DA00006 | AC CORD W/PLUG | ⚠ 150SG |
| 126 | K2CJ2DA00011 | AC CORD W/PLUG | ⚠ 150GN |
| 127 | RJA0053-3X | AC CORD W/PLUG | ⚠ 100EB,150EB/GC/GCS/SG |
| 128 | K2CA2CA00020 | AC CORD W/PLUG | ⚠ 158GK |
| 133 | LSPF0107 | POLY BAG | |
| 408 | XQN2+BJ6FN | SCREW,STEEL | |
| 419 | XQN2+BJ5FN | SCREW,STEEL | |
| 433 | XQN16+BJ6FN | SCREW,STEEL | |
| 457 | XQN2+BF5FN | SCREW,STEEL | |
| 519 | XQN16+BF4FN | SCREW,STEEL | |
| 533 | XQN16+BJ4FN | SCREW,STEEL | |
| 536 | XQN16+AJ4FN | SCREW,STEEL | |
| 538 | XQN14+BJ4FN | SCREW,STEEL | |
| 544 | XQN16+BF2FN | SCREW,STEEL | |
| 545 | XQN16+BF25FN | SCREW,STEEL | |
| 546 | LSHD0088 | SCREW,STEEL | |
| 701 | LSSC0827 | FRONT EARTH PLATE A | |
| 702 | LSMG0136 | MIC DAMPER | |
| 703 | LSJB8325 | FRONT FPC | |
| 704 | B3RAB0000024 | INFRARED RECEIVER | 100EB/EG |
| 705 | LSEK0684 | ELECTRIC CONDENSOR MICROPHONE UNIT | |
| 711 | LSSC0821 | HEAT SINK ANGLE | |
| 712 | LSSC0822 | MAIN SHIELD PLATE | |
| 713 | LSSC0830 | HEAT SINK SHEET | |
| 714 | LSSC0896 | HEAT CONDUCT SHEET | |
| 721 | K1NA09E00063 | SD UNIT | 150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,152EG,158GK |
| E10 | LSEP8314P1 | MAIN P.C.B. | RTL 100EB/EG,150E/EB/EF/EG/EP,152EG |
| E10 | LSEP8314Q1 | MAIN P.C.B. | RTL 150EE/GC/GN/GCS/SG,158GK |
| E20 | LSEP8316A1 | FRONT P.C.B. | RTL 100EB/EG |



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| E20 | LSEP8316C1 | FRONT P.C.B. | RTL 150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,152EG,158GK |
| E30 | LSEP8317A1 | JACK P.C.B. | RTL |
| E40 | LSEP8318A1 | LIQUID CRYSTAL DISPLAY BACKLIGHT P.C.B. NR | |
| E50 | LSEQ0805 | CCD P.C.B. NR | |
| E60 | LSEP8339A1 | SIDE R P.C.B. | RTL 100EB/EG |
| E60 | LSEP8339B1 | SIDE R P.C.B. | RTL 150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,152EG,158GK |
| E61 | LSEP8340A1 | OPEN SWITCH P.C.B. | RTL |

### SERVICE FIXTURES AND TOOLS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| | LSVQ0028 | PLIER FOR NON ZIF CONNECTOR | |
| | LSUQ0050 | GREASE | |
| | VUVS0007 | EXTENSION CABLE 12P | |
| | VFKW0124A | EXTENSION CABLE 14P | |
| | LSUA0020 | EXTENSION CABLE 20P | |
| | VUVS0012 | EXTENSION CABLE 22P | |
| | LSUA0059 | EXTENSION CABLE 60P | |
| | VFK1164LBX1 | LIGHT BOX | SPC |
| | VFK1164TCM02 | INFINITY LENS (WITH FOCUS CHART) | SPC |
| | VFK1164TAR58 | ATTACHMENT RING (58mm) | SPC |
| | VFK1164TAR55 | ATTACHMENT RING (55mm) | SPC |
| | VFK1164TAR52 | ATTACHMENT RING (52mm) | SPC |
| | VFK1164TAR49 | ATTACHMENT RING (49mm) | SPC |
| | VFK1164TAR46 | ATTACHMENT RING (46mm) | SPC |
| | VFK1164TAR43 | ATTACHMENT RING (43mm) | SPC |
| | VFK1164TAR37 | ATTACHMENT RING (37mm) | SPC |
| | VFK1164TAR3A | ATTACHMENT RING (30.5mm) | SPC |
| | VFK1164TAR27 | ATTACHMENT RING (27mm) | SPC |
| | VFK1164TFCT2 | COLOR CONVERSION FILTER (C14) | SPC |
| | VFK1164TFWC2 | WHITE CHART | SPC |
| | VFK1164TFCB2 | COLOR BAR CHART | SPC |
| | VFK1164TFGS2 | GRAY SCALE CHART | SPC |

## 15.2. ELECTRICAL REPLACEMENT PARTS LIST

**Definition of Parts supplier:**

## 1. All parts are supplied from PSEC.

### PRINTED CIRCUIT BOARD ASSEMBLY



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| E10 | LSEP8314P1 | MAIN P.C.B. | E.S.D. RTL 100EB/EG,150E/ EB/EF/EG/ EP,152EG |
| E10 | LSEP8314Q1 | MAIN P.C.B. | E.S.D. RTL 150EE/GC/GN/ GCS/SG,158GK |
| E20 | LSEP8316A1 | FRONT P.C.B. | RTL 100EB/EG |
| E20 | LSEP8316C1 | FRONT P.C.B. | RTL 150E/EB/EF/ EG/EP/EE/GC/GN /GCS/ SG,152EG,158GK |
| E30 | LSEP8317A1 | JACK P.C.B. | RTL |
| E40 | LSEP8318A1 | LIQUID CRYSTAL DISPLAY BACKLIGHT P.C.B. NR | |
| E50 | LSEQ0805 | CCD P.C.B. NR | |
| E60 | LSEP8339A1 | SIDE R P.C.B. | RTL 100EB/EG |
| E60 | LSEP8339B1 | SIDE R P.C.B. | RTL 150E/EB/EF/ EG/EP/EE/GC/GN /GCS/ SG,152EG,158GK |
| E61 | LSEP8340A1 | OPEN SWITCH P.C.B. | RTL |

## 15.2.1. FRONT P.C.B.

### INTEGRATED CIRCUITS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| IC4801 | C0ABBB000369 | IC, LINEAR | |
| or IC4801 | C0ABBB000262 | IC, LINEAR | |

### TRANSISTORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q4801 | 2SD2216J08 | TRANSISTOR SI NPN CHIP | |
| or Q4801 | B1ABCF000104 | TRANSISTOR SI NPN CHIP | |
| Q6501 | 2SD10300SL | TRANSISTOR SI NPN CHIP | |
| Q6502 | 2SD2216J08 | TRANSISTOR SI NPN CHIP | |
| or Q6502 | B1ABCF000104 | TRANSISTOR SI NPN CHIP | |

### DIODES

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D6503 | MA3S132D0L | DIODE SI CHIP | |
| D6504 | B3GA00000041 | LIGHT EMITTING DIODE | |

### RESISTORS



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R4802 | D0GA472JA015 | MGF CHIP 1/16W 4.7K | |
| R4803 | D0GA223JA015 | MGF CHIP 1/16W 22K | |
| R4804 | D0GA333JA015 | MGF CHIP 1/16W 33K | |
| R4805 | ERJ2GEJ124X | MGF CHIP 1/16W 120K | |
| R4806 | D0GA333JA015 | MGF CHIP 1/16W 33K | |
| R4807 | D0HA392ZA001 | MGF CHIP 1/16W 3.9K | |
| R4808 | ERJ2GEJ124X | MGF CHIP 1/16W 120K | |
| R4809 | D0GA333JA015 | MGF CHIP 1/16W 33K | |
| R4810 | D0HA392ZA001 | MGF CHIP 1/16W 3.9K | |
| R6501 | ERJ2GEJ560X | MGF CHIP 1/16W 56 | 100EB/EG |
| R6502 | D0GA683JA015 | MGF CHIP 1/16W 68K | 100EB/EG |
| R6503 | ERJ2GEJ104X | MGF CHIP 1/16W 100K | |
| R6504 | ERJ3GEYJ106V | MGF CHIP 1/16W 10M | |
| R6505 | ERJ3GEYJ225V | MGF CHIP 1/16W 2.2M | |
| R6506 | ERJ2GEJ334X | MGF CHIP 1/16W 330K | |
| R6507 | D0GA182JA015 | MGF CHIP 1/16W 1.8K | |
| R6508 | D0GA472JA015 | MGF CHIP 1/16W 4.7K | |
| R6509 | D0GA102JA015 | MGF CHIP 1/16W 1K | |

### CAPACITORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C4801 | F1H1A105A036 | C CHIP 10V 1UF | |
| C4802 | F1H1A105A036 | C CHIP 10V 1UF | |
| C4803 | ECJ2FB0J106K | C CHIP 6.3V 10UF | |
| C4804 | ECJ0EB1C822K | C CHIP 16V 8200PF | |
| C4805 | ECJ0EB1A273K | C CHIP 10V 0.027UF | |
| C4806 | ECJ0EB1A273K | C CHIP 10V 0.027UF | |
| C4808 | ECJ0EB1A273K | C CHIP 10V 0.027UF | |
| C4809 | ECJ0EB1C822K | C CHIP 16V 8200PF | |
| C4810 | ECJ0EB1A273K | C CHIP 10V 0.027UF | |
| C4812 | F3F0J226A032 | TANTALUM CHIP 6.3V 22UF | |
| C6501 | F3F0J106A032 | TANTALUM CHIP 6.3V 10UF | 100EB/EG |
| C6502 | F1G1A1040006 | C CHIP 10V 0.1UF | 100EB/EG |
| C6503 | F1H0J474A002 | C CHIP 6.3V 0.47UF | |
| C6504 | F1G1A1040006 | C CHIP 10V 0.1UF | |

### FPC CONNECTORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| FP6501 | K1MN12BA0089 | CONNECTOR 12P | |

### MISCELLANEOUS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 701 | LSSC0827 | FRONT EARTH PLATE A | |
| 702 | LSMG0136 | MIC DAMPER | |
| 703 | LSJB8325 | FRONT FPC | |
| 704 | B3RAB0000024 | INFRARED RECEIVER | 100EB/EG |
| 705 | LSEK0684 | ELECTRIC CONDENSOR MICROPHONE UNIT | |

## 15.2.2. JACK P.C.B.



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### DIODES

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D7001 | MAZM068H0L | DIODE ZENER CHIP 6.8V | |
| D7002 | MAZM068H0L | DIODE ZENER CHIP 6.8V | |

### RESISTORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R7001 | D0GA122JA015 | MGF CHIP 1/16W 1.2K | |
| R7002 | ERJ2GE0R00X | MGF CHIP 1/16W 0 | |
| R7003 | ERJ2GE0R00X | MGF CHIP 1/16W 0 | |
| R7004 | ERJ6GEYJ102V | MGF CHIP 1/10W 1K | |

### CAPACITORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C7001 | ECJ0EB1H332K | C CHIP 50V 3300PF | |
| C7002 | ECJ0EB1H332K | C CHIP 50V 3300PF | |
| C7003 | F1H1A105A036 | C CHIP 10V 1UF | |

### COILS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L7001 | J0JBC0000027 | FERRITE BEAD CHIP | |
| L7002 | J0JBC0000027 | FERRITE BEAD CHIP | |
| L7003 | J0JBC0000027 | FERRITE BEAD CHIP | |
| L7004 | J0JBC0000027 | FERRITE BEAD CHIP | |
| L7005 | J0JBC0000027 | FERRITE BEAD CHIP | |

### PIN HEADERS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| B7001 | K1KA20BA0052 | CONNECTOR 20P | |

### JACKS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| JK7001 | K2HZ110E0001 | AUDIO VIDEO S-VIDEO JACK SOCKET | |
| JK7002 | K2HZ105E0007 | USB MINI LACK SOCKET | |

### BATTERY

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| BT7001 | ML-621S/F9D | BATTERY | |

## 15.2.3. LIQUID CRYSTAL DISPLAY BACKLIGHT P.C.B. NR

### TRANSISTORS



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q8101 | 2SD1819ARL | TRANSISTOR SI NPN CHIP | |
| Q8102 | 2SD1819ARL | TRANSISTOR SI NPN CHIP | |
| Q8103 | 2SD1819ARL | TRANSISTOR SI NPN CHIP | |
| Q8104 | 2SD1819ARL | TRANSISTOR SI NPN CHIP | |
| Q8105 | XP0450100L | TRANSISTOR COMPLX CMP SI NPN CHIP | |
| Q8106 | XP0440100L | TRANSISTOR COMPLX CMP SI PNP CHIP | |

## DIODES

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D8109 | MA2S728008 | DIODE SI CHIP | |
| or D8109 | B0JCDD000002 | DIODE SI CHIP | |
| or D8109 | MA2S72800L | DIODE SI CHIP | |
| D8110 | MA2S728008 | DIODE SI CHIP | |
| or D8110 | B0JCDD000002 | DIODE SI CHIP | |
| or D8110 | MA2S72800L | DIODE SI CHIP | |

## RESISTORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R8101 | ERJ3GEY0R00V | MGF CHIP 1/16W 0 | |
| R8102 | ERJ3GEYJ331V | MGF CHIP 1/16W 330 | |
| R8103 | ERJ3GEYJ331V | MGF CHIP 1/16W 330 | |
| R8104 | ERJ3GEY0R00V | MGF CHIP 1/16W 0 | |
| R8105 | ERJ3GEY0R00V | MGF CHIP 1/16W 0 | |
| R8106 | ERJ3GEYJ331V | MGF CHIP 1/16W 330 | |
| R8107 | ERJ3GEY0R00V | MGF CHIP 1/16W 0 | |
| R8108 | D0HB470ZA003 | MGF CHIP 1/16W 47 | |
| R8109 | D0HB470ZA003 | MGF CHIP 1/16W 47 | |
| R8110 | D0HB470ZA003 | MGF CHIP 1/16W 47 | |
| R8111 | D0HB470ZA003 | MGF CHIP 1/16W 47 | |
| R8112 | ERJ3GEYJ103V | MGF CHIP 1/16W 10K | |
| R8113 | ERJ3GEYJ103V | MGF CHIP 1/16W 10K | |
| R8114 | ERA3YKD104V | MGF CHIP 1/16W 100K | |
| R8115 | ERA3YED123V | MGF CHIP 1/16W 12K | |
| R8116 | ERA3YKD184V | MGF CHIP 1/16W 180K | |
| R8117 | ERJ3GEYJ393V | MGF CHIP 1/16W 39K | |
| R8118 | ERJ3GEYJ393V | MGF CHIP 1/16W 39K | |
| R8119 | ERJ3GEYJ153V | MGF CHIP 1/16W 15K | |
| R8120 | ERJ3GEYJ113V | MGF CHIP 1/16W 11K | |

## CAPACITORS



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C8101 | F1H1H330A230 | C CHIP 50V 33PF | |
| C8102 | F1H1H330A230 | C CHIP 50V 33PF | |
| C8103 | F1H1H330A230 | C CHIP 50V 33PF | |
| C8104 | F1J1C2250003 | C CHIP 16V 2.2UF | |
| C8105 | F1J1C2250003 | C CHIP 16V 2.2UF | |
| C8106 | F1H1C104A041 | C CHIP 16V 0.1UF | |
| C8107 | ECJ3YB1C475K | C CHIP 16V 4.7UF | |
| C8108 | F1J1C1050028 | C CHIP 16V 1UF | |
| C8109 | F1J1C1050028 | C CHIP 16V 1UF | |
| C8110 | F1J1C1050028 | C CHIP 16V 1UF | |

### COILS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L8101 | G1C100M00010 | COIL CHIP 10UH | |
| L8102 | G1C100M00010 | COIL CHIP 10UH | |
| L8103 | G1C100M00010 | COIL CHIP 10UH | |
| L8104 | G1C100M00010 | COIL CHIP 10UH | |

### FPC CONNECTORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| FP8101 | K1MN26BA0059 | CONNECTOR 26P | |
| FP8102 | K1MN24BA0059 | CONNECTOR 24P | |

## 15.2.4. SIDE R P.C.B.

### TRANSISTORS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| Q6301 | 2SB09700RL | TRANSISTOR SI PNP CHIP | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |

### DIODES

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| D6301 | B3AAB0000038 | LIGHT EMITTING DIODE | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |

### RESISTORS



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| R6301 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| R6302 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| R6303 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| R6304 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| R6305 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| R6306 | ERJ3GEYJ103V | MGF CHIP 1/16W 10K | |
| R6307 | ERJ3GEYJ103V | MGF CHIP 1/16W 10K | |
| R6308 | ERJ3GEYJ103V | MGF CHIP 1/16W 10K | |
| R6309 | ERJ3GEYJ103V | MGF CHIP 1/16W 10K | |
| R6310 | ERJ3GEYJ103V | MGF CHIP 1/16W 10K | |
| R6311 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | |
| R6312 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | |
| R6313 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | |
| R6314 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | |
| R6315 | ERJ3GEYJ220V | MGF CHIP 1/16W 22 | |
| R6316 | ERJ3GEYJ223V | MGF CHIP 1/16W 22K | |
| R6317 | ERJ3GEYJ223V | MGF CHIP 1/16W 22K | |
| R6323 | ERJ3GEYJ561V | MGF CHIP 1/16W 560 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| R6324 | ERJ3GEY0R00V | MGF CHIP 1/16W 0 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| R6325 | ERJ6GEYJ150V | MGF CHIP 1/10W 15 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |

## CAPACITORS



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| C6301 | F3F0J226A032 | TANTALUM CHIP 6.3V 22UF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6302 | F1H1C104A041 | C CHIP 16V 0.1UF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6303 | F1H1C104A041 | C CHIP 16V 0.1UF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6304 | F1H1H330A230 | C CHIP 50V 33PF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6305 | F1H1H330A230 | C CHIP 50V 33PF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6306 | F1H1H330A230 | C CHIP 50V 33PF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6307 | F1H1H330A230 | C CHIP 50V 33PF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6308 | F1H1H330A230 | C CHIP 50V 33PF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |
| C6310 | F1H1H103A219 | C CHIP 50V 0.01UF | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |

## COILS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| L6301 | G1C100M00010 | COIL CHIP 10UH | |
| L6302 | ERJ3GEYJ181V | MGF CHIP 1/16W 180 | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |

## PIN HEADERS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| P6301 | K1KA02BA0014 | CONNECTOR 2P | |

## FPC CONNECTOR

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| FP6301 | K1MN22BA0089 | CONNECTOR 22P | |

## SWITCHES



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| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| SW6301 | K0F111A00472 | PUSH SWITCH | |
| SW6302 | K0D113B00087 | SWITCH SLIDE | |

### MISCELLANEOUS

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| 721 | K1NA09E00063 | SD UNIT | 150E/EB/EF/EG/ EP/EE/GC/GN/ GCS/ SG,152EG,158GK |

## 15.2.5. OPEN SWITCH P.C.B.

### SWITCHES

| Ref. No. | Part No. | Part Name & Description | Remarks |
|---|---|---|---|
| SW8301 | K0L1AA000010 | SWITCH SEESAW | |

# 16. Schematic Diagrams for Printing with Letter Size



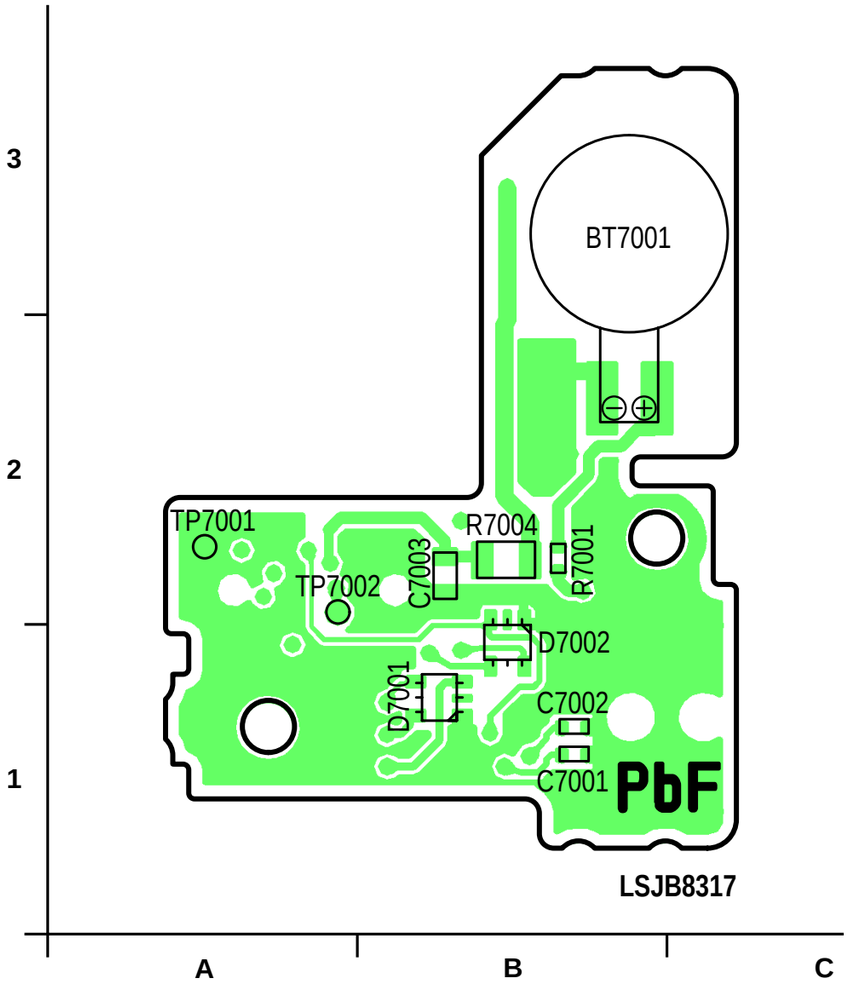
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NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

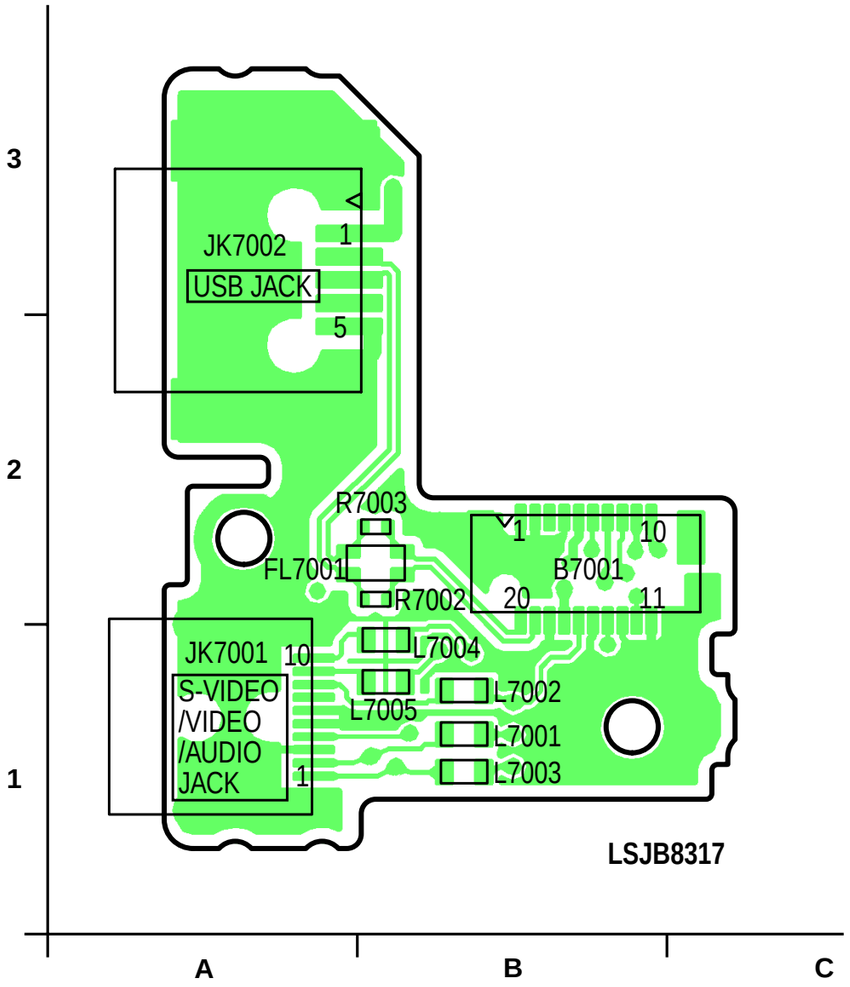
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

## (COMPONENT SIDE)




(DUAL PATTERNS)

## (FOIL SIDE)




(DUAL PATTERNS)

### Parts Location

| JACK P.C.B. | | |
|---|---|---|
| Diodes | | |
| D7001 | B-1 | C |
| D7002 | B-1 | C |
| Coilss | | |
| L7001 | B-1 | F |
| L7002 | B-1 | F |
| L7003 | B-1 | F |
| L7004 | B-1 | F |
| L7005 | B-1 | F |
| Capacitors | | |
| C7001 | B-1 | C |
| C7002 | B-1 | C |
| C7003 | B-2 | C |
| Resistors | | |
| R7001 | B-2 | C |
| R7002 | B-2 | F |
| R7003 | B-2 | F |
| R7004 | B-2 | C |
| Miscellaneous | | |
| B7001 | B-2 | F |
| BT7001 | B-3 | C |
| JK7001 | A-1 | F |
| JK7002 | A-3 | F |

# LCD BACKLIGHT P.C.B. LSEP8318A1

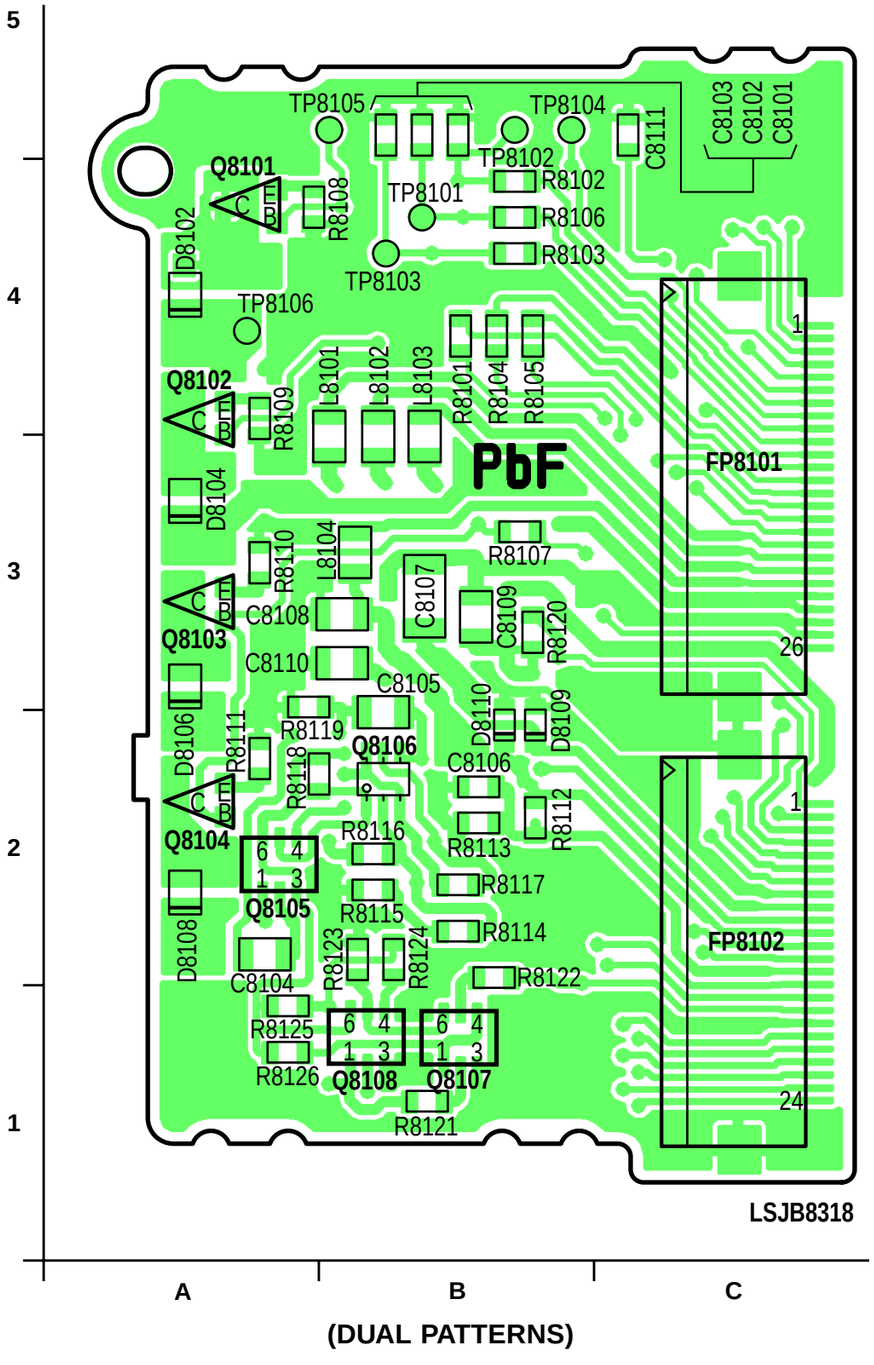
NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

NOTE:
ALL INDIVIDUAL PARTS EXCEPT D8101, D8103, D8105, AND D8107
ON LCD BACKLIGHT P.C.B. ARE SUPPLIED AS REPLACEMENT PARTS.
WHEN SERVICING THESE PARTS, REPLACE LCD BACKLIGHT P.C.B.
INSTEAD OF INDIVIDUAL PARTS.

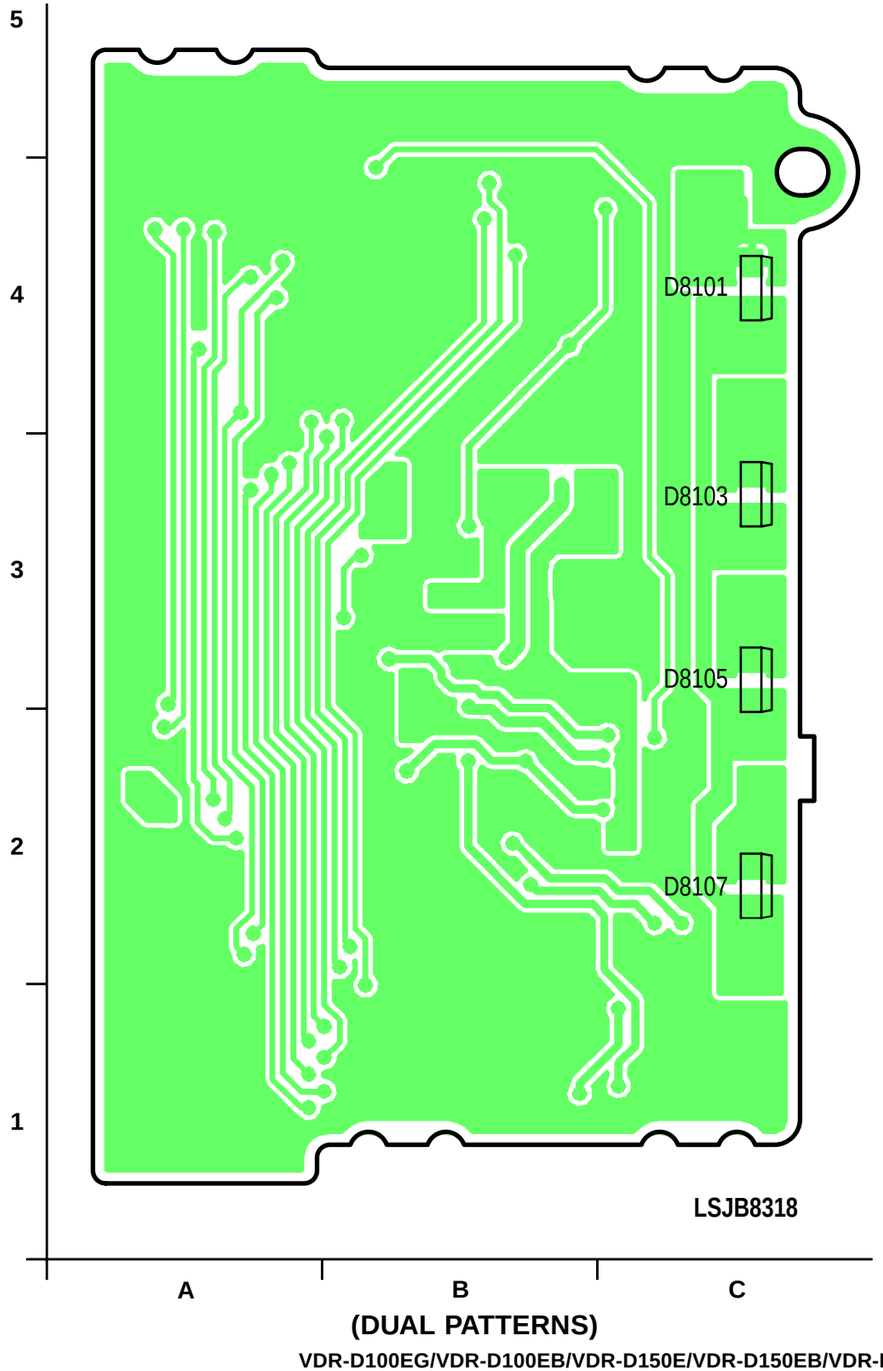
NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

## (COMPONENT SIDE)




(DUAL PATTERNS)

## (FOIL SIDE)




(DUAL PATTERNS)

### Parts Location

| LCD P.C.B. | | | | | |
|---|---|---|---|---|---|
| Transisters | | | C8107 | B-3 | C |
| Q8101 | A-4 | C | C8108 | A-3 | C |
| Q8102 | A-4 | C | C8109 | B-3 | C |
| Q8103 | A-3 | C | C8110 | A-3 | C |
| Q8104 | A-2 | C | Resistors | | |
| Q8105 | A-2 | C | R8101 | B-4 | C |
| Q8106 | B-2 | C | R8102 | B-4 | C |
| Connectors | | | R8103 | B-4 | C |
| FP8101 | C-3 | C | R8104 | B-4 | C |
| FP8102 | C-2 | C | R8105 | B-4 | C |
| Diodes | | | R8106 | B-4 | C |
| D8109 | B-2 | C | R8107 | B-3 | C |
| D8110 | B-2 | C | R8108 | B-4 | C |
| Coils | | | R8109 | A-4 | C |
| L8101 | B-4 | C | R8110 | A-3 | C |
| L8102 | B-4 | C | R8111 | A-2 | C |
| L8103 | B-4 | C | R8112 | B-2 | C |
| L8104 | B-3 | C | R8113 | B-2 | C |
| Capacitors | | | R8114 | B-2 | C |
| C8101 | C-5 | C | R8115 | B-2 | C |
| C8102 | C-5 | C | R8116 | B-2 | C |
| C8103 | C-5 | C | R8117 | B-2 | C |
| C8104 | A-2 | C | R8118 | A-2 | C |
| C8105 | B-3 | C | R8119 | A-2 | C |
| C8106 | B-2 | C | R8120 | B-3 | C |

LCD BACKLIGHT P.C.B. LSEP8318A1

VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE
/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK

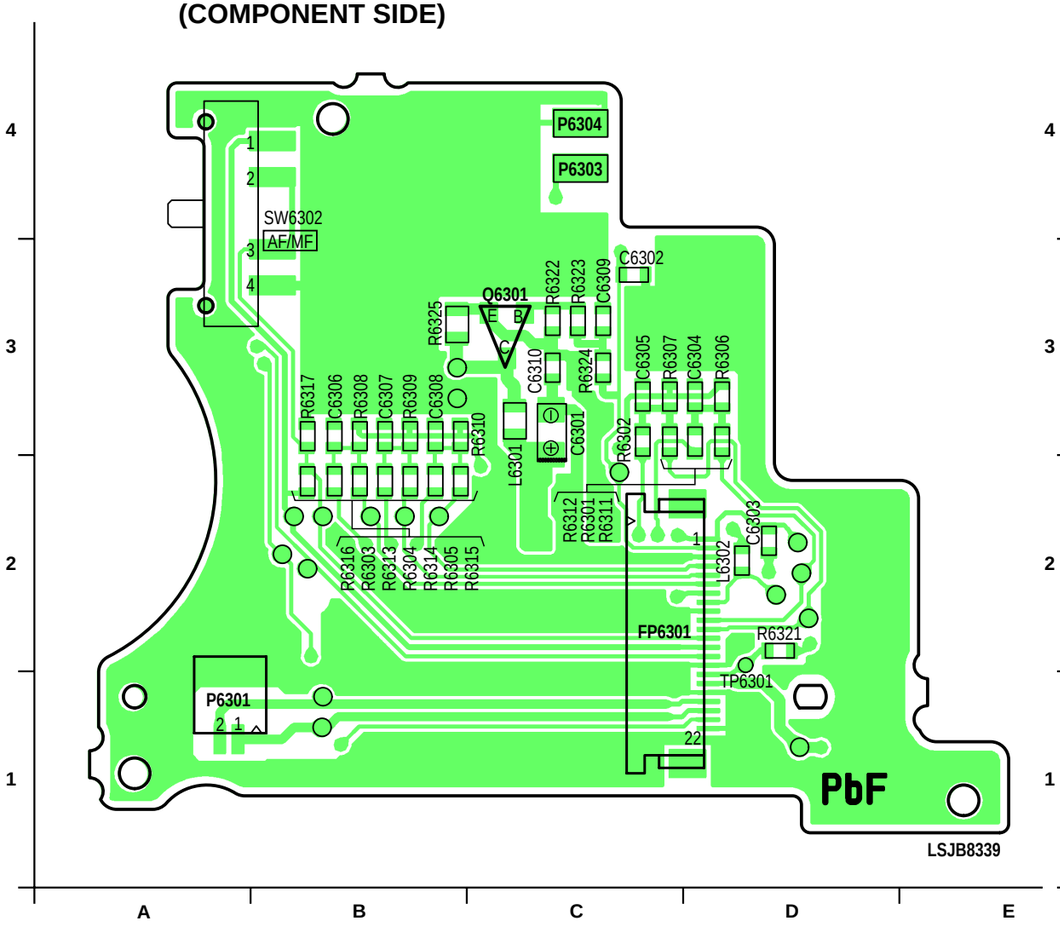
## SIDE R P.C.B. LSEP8339A1 VDR-D100EG/EB
## LSEP8339B1 VDR-D150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,VDR-D152EG,VDR-D158GK

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

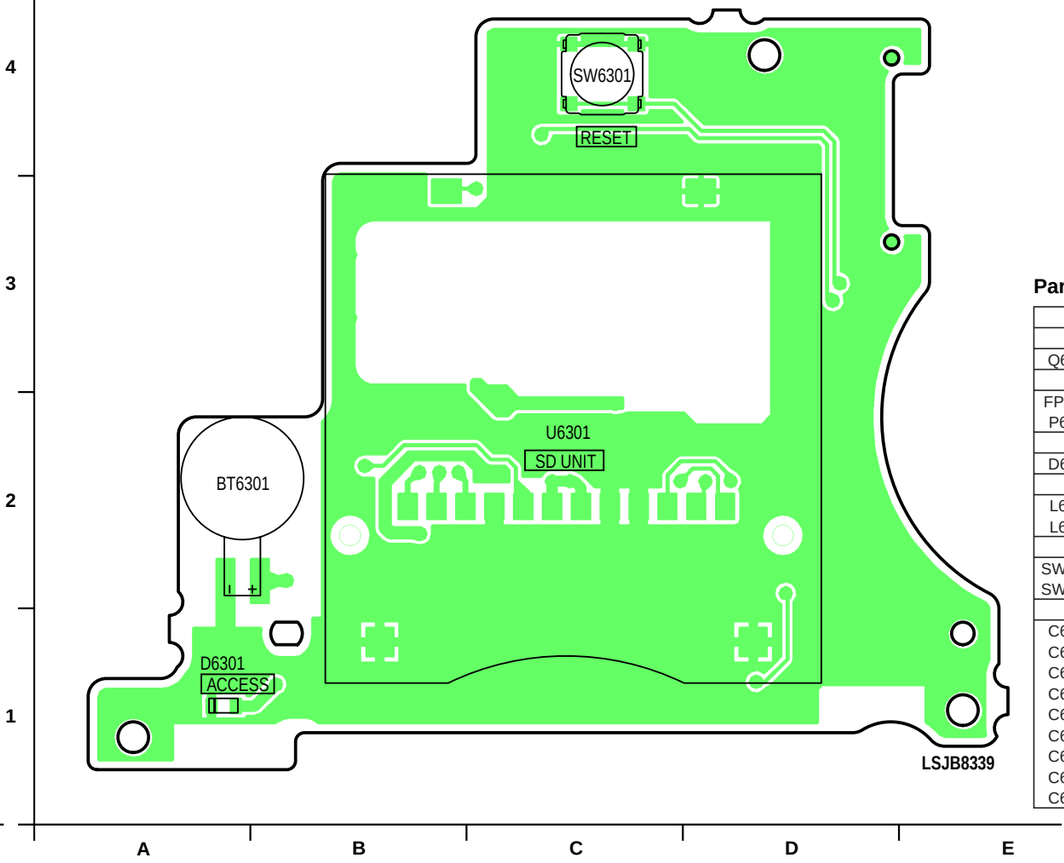
NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

### (COMPONENT SIDE)




### (FOIL SIDE)

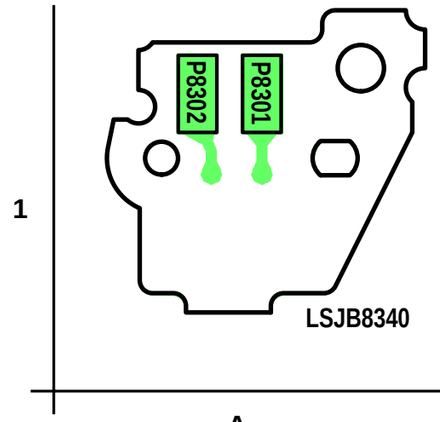



### Parts Location

| SIDE-R P.C.B. | | | | | |
|---|---|---|---|---|---|
| Transister | | | Resistors | | |
| Q6301 | C-3 | C | R6301 | C-2 | C |
| Connectors | | | R6302 | C-3 | C |
| FP6301 | C-2 | C | R6303 | B-2 | C |
| P6301 | A-1 | C | R6304 | B-2 | C |
| Diode | | | R6305 | B-2 | C |
| D6301 | A-1 | F | R6306 | D-3 | C |
| Coils | | | R6307 | C-3 | C |
| L6301 | C-2 | C | R6308 | B-3 | C |
| L6302 | D-2 | C | R6309 | B-3 | C |
| Switches | | | R6310 | C-3 | C |
| SW6301 | C-4 | F | R6311 | C-2 | C |
| SW6302 | B-4 | C | R6312 | C-2 | C |
| Capacitors | | | R6313 | B-2 | C |
| C6301 | C-3 | C | R6314 | B-2 | C |
| C6302 | C-3 | C | R6315 | C-2 | C |
| C6303 | D-2 | C | R6316 | B-2 | C |
| C6304 | D-3 | C | R6317 | B-3 | C |
| C6305 | C-3 | C | R6323 | C-3 | C |
| C6306 | B-3 | C | R6324 | C-3 | C |
| C6307 | B-3 | C | R6325 | B-3 | C |
| C6308 | B-3 | C | Miscellaneous | | |
| C6310 | C-3 | C | U6301 | C-2 | F |

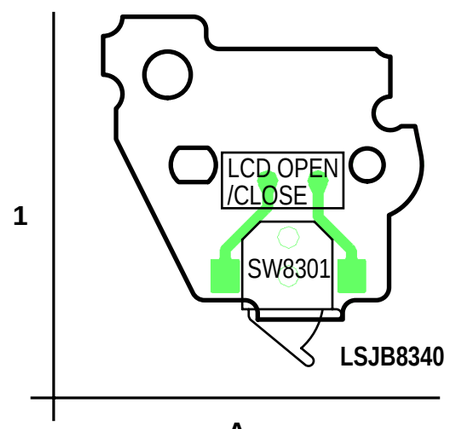
## OPEN SWITCH P.C.B. LSEP8340A1

### (COMPONENT SIDE)




(DUAL PATTERNS)

### (FOIL SIDE)




(DUAL PATTERNS)

**SIDE R P.C.B. LSEP8339A1/LSEP8339B1**
**OPEN SWITCH P.C.B. LSEP8340A1**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE**
**/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

1. **Important safety notice**

   Components identified by the sign ⚠ have special characteristics important for safety. When replacing any of these components, use only the specified parts.

2. Do not use the part numbers shown on these drawings for ordering.
   The correct part number and part value is shown in the parts list, and may be slightly different or amended since this drawing was prepared.

3. Use only original replacement parts:
   To maintain original function and reliability of repaired units, use only original replacement parts which are listed with their part numbers in the parts list section of the service manual.

4. Parts different in shape or size may be used.
   However, only interchangeable parts will be supplied as service replacement parts.

5. Test point information

   ○ : Test point with no test pin.

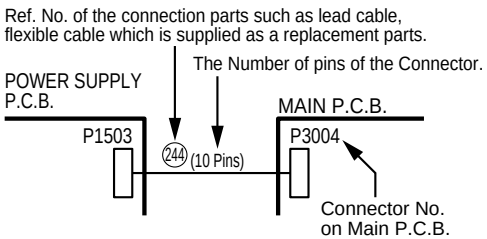
## Schematic Diagram Notes

1. Indication for Zener Voltage of Zener Diodes
   The Zener Voltages of Zener Diodes are indicated as such on Schematic Diagrams.

   Example:
   (6.2V).....Zener Voltage

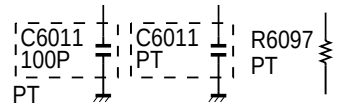
2. How to identify Connectors
   Each connector is labeled with a Connector No. and Pin No. Indicating what it is connected to (its counter part).
   Use the interconnection schematic diagram to find the connection between associated connectors.

   Example:
   The connections between two P.C.B.s are shown below.



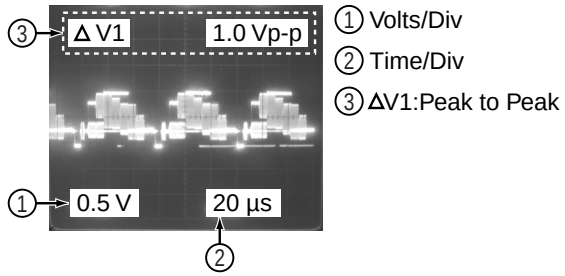

3. Parts marked "PT" are not used in any models included in this service model.

Example:




## Signal Waveform Note

How to read Signal Waveform




## Voltage Chart Note

Voltage Measurement

a. Color bar signal in SP mode.

b. ---:Unmeasurable or not necessary to measure.

## Circuit Board Layout Note

Circuit Board Layouts show components installed for various models.
For proper parts content for the model you are servicing, please refer to the schematic diagram and parts list.

NOTE:

Circuit Board Layouts include components which are not used.

## Model Number Indication

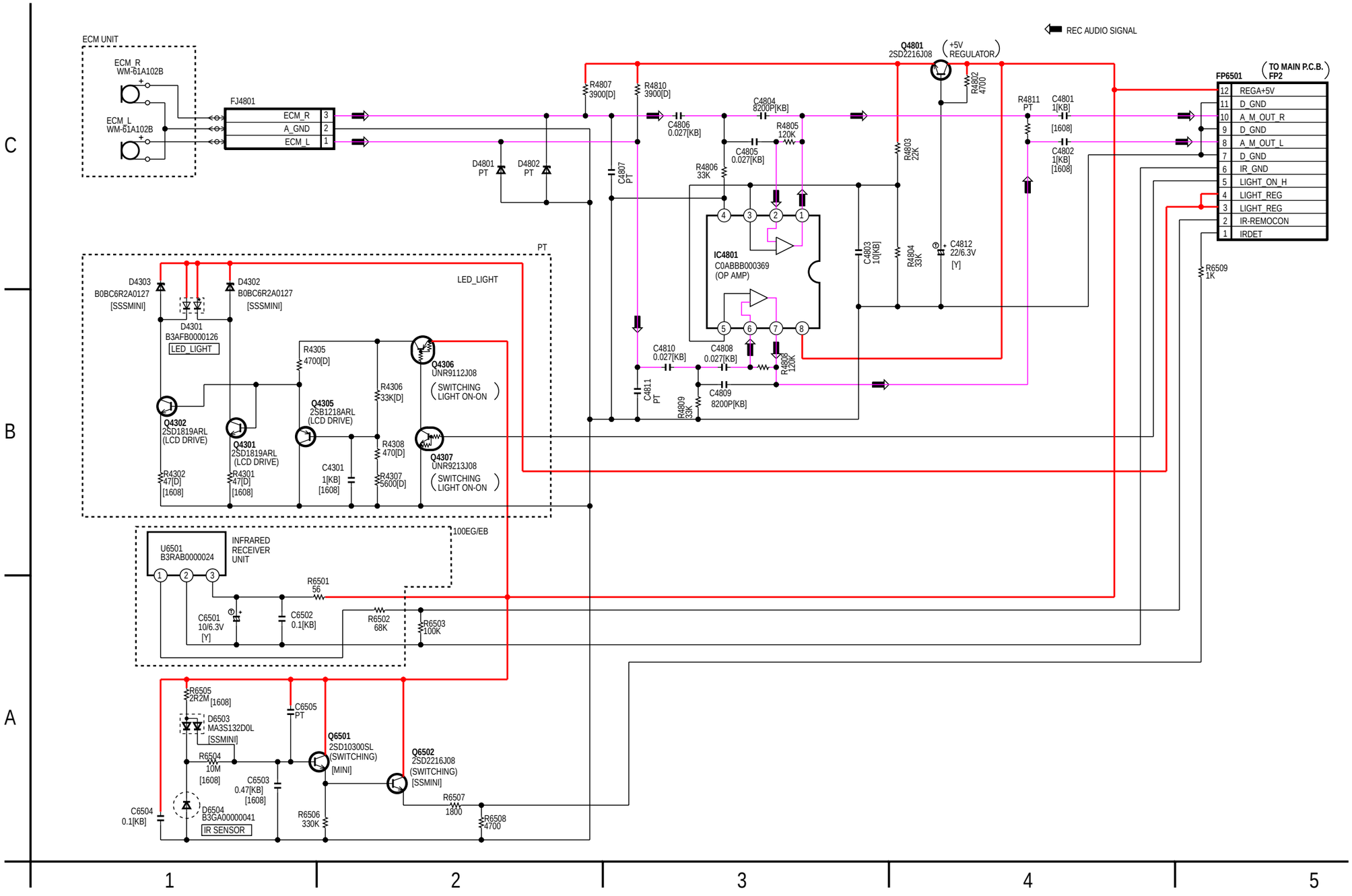
Model numbers are indicated without "VDR-D."

# FRONT SCHEMATIC DIAGRAM

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



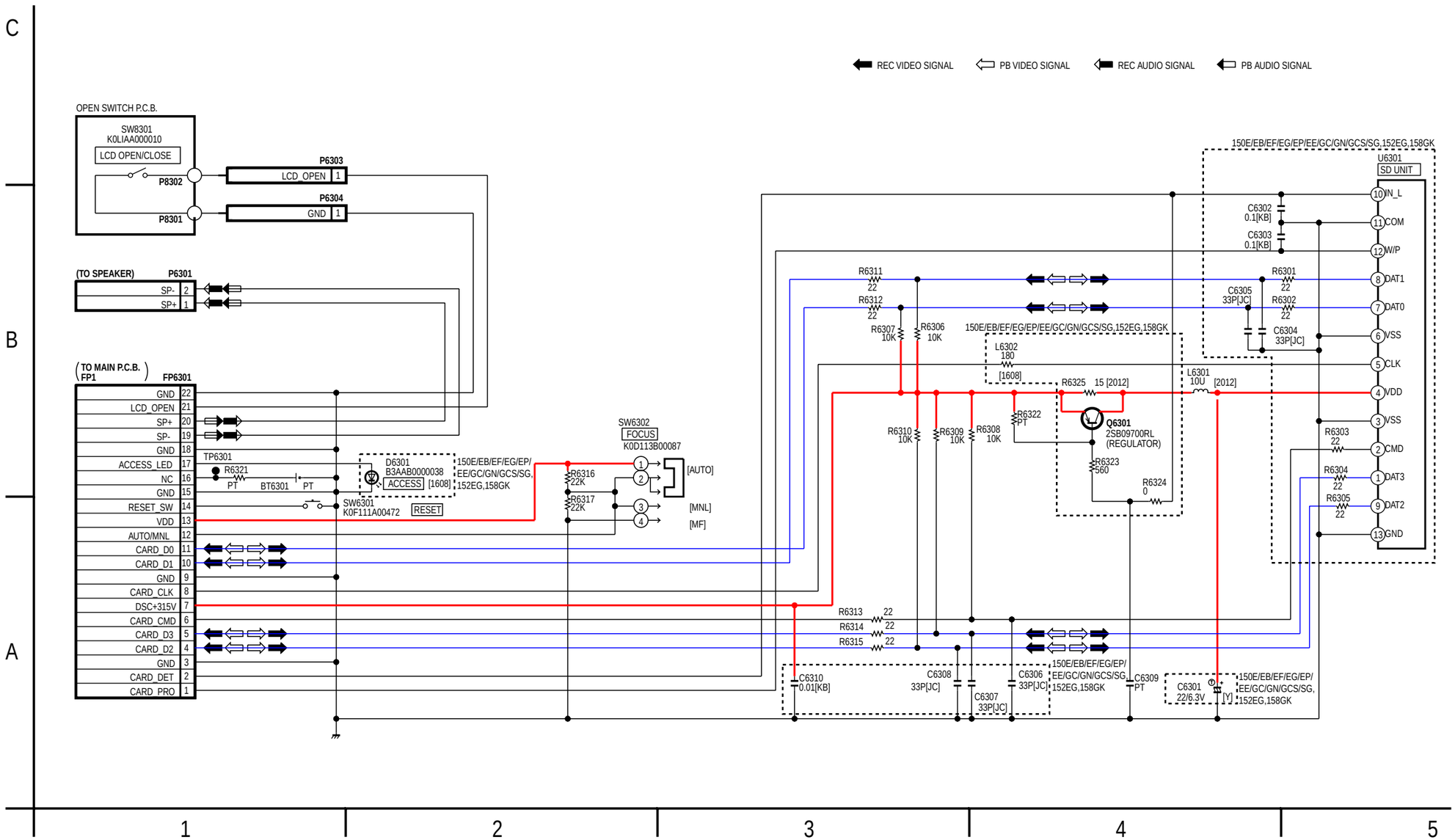

**LINK TO VOLTAGE CHART**
**LSJB8316**
**FRONT SCHEMATIC DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# SIDE R SCHEMATIC DIAGRAM

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.




**LSJB8339**
**SIDE R SCHEMATIC DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

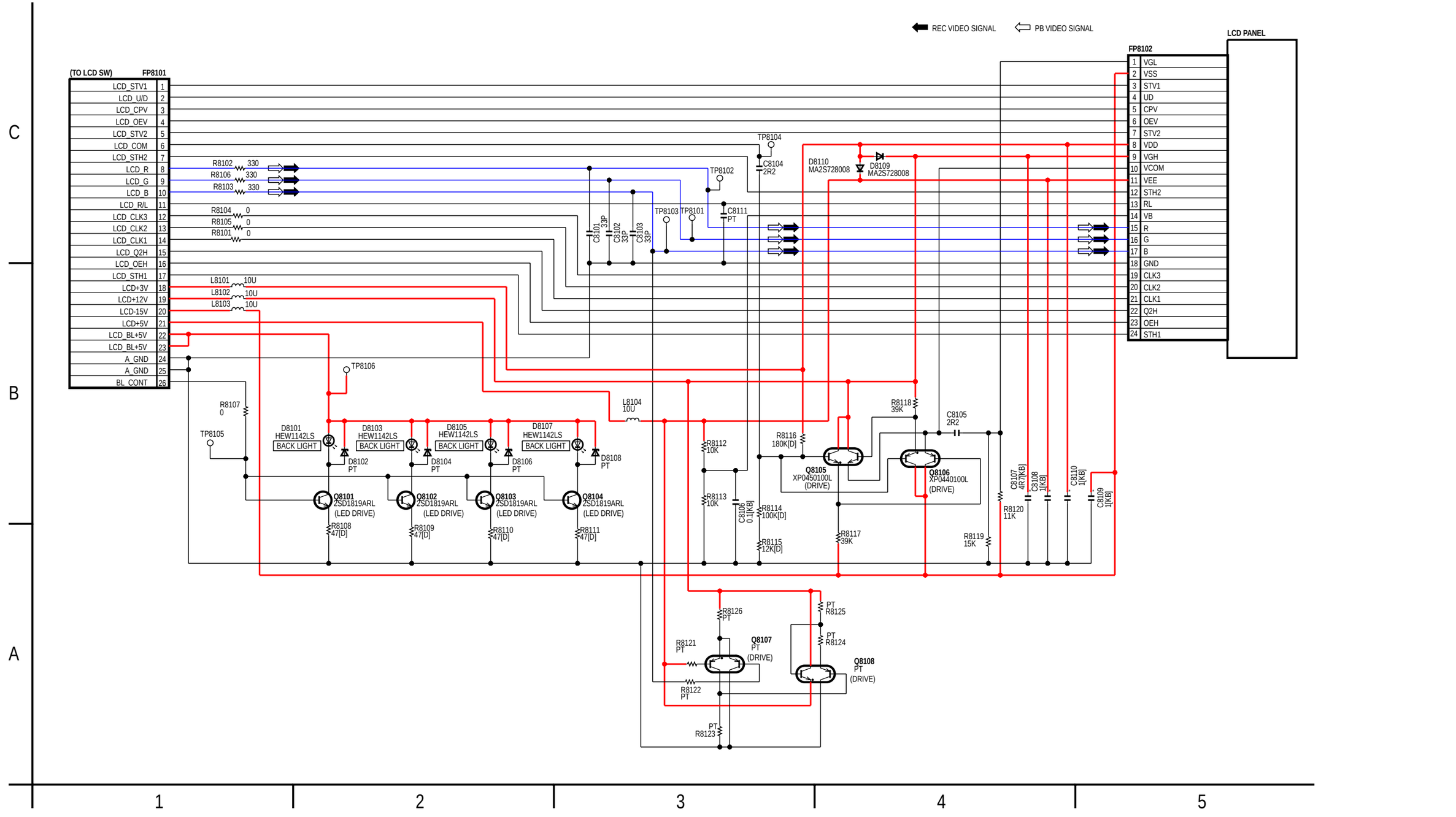
# LCD BACKLIGHT SCHEMATIC DIAGRAM

NOTE:
ALL INDIVIDUAL PARTS EXCEPT D8101, D8103, D8105, AND D8107 ON LCD BACKLIGHT P.C.B. ARE SUPPLIED AS REPLACEMENT PARTS. WHEN SERVICING THESE PARTS, REPLACE LCD BACKLIGHT P.C.B. INSTEAD OF INDIVIDUAL PARTS.

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.




**LINK TO VOLTAGE CHART**

**LSJB8318**

**LCD BACKLIGHT SCHEMATIC DIAGRAM**

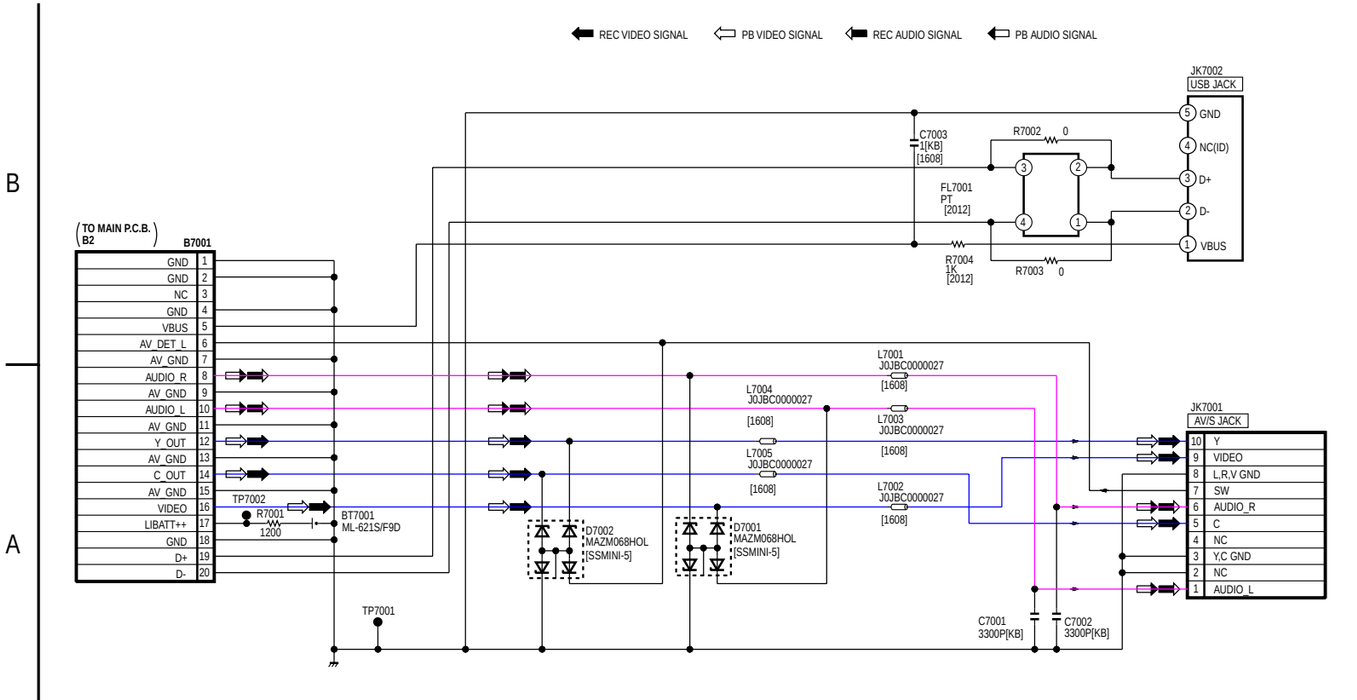
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

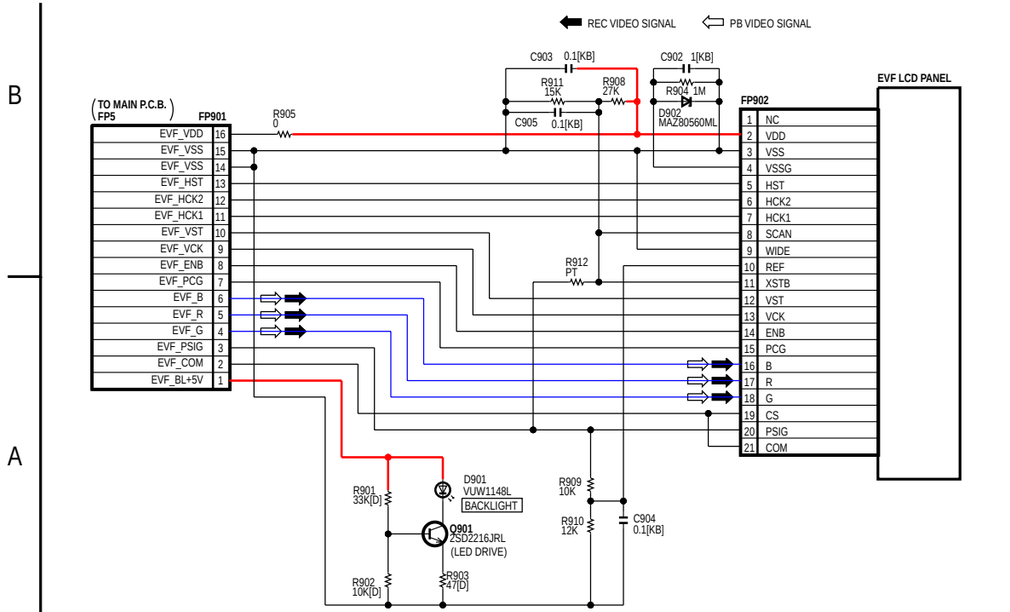
## JACK SCHEMATIC DIAGRAM




## EVF BACKLIGHT SCHEMATIC DIAGRAM

NOTE: EVF BACKLIGHT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.

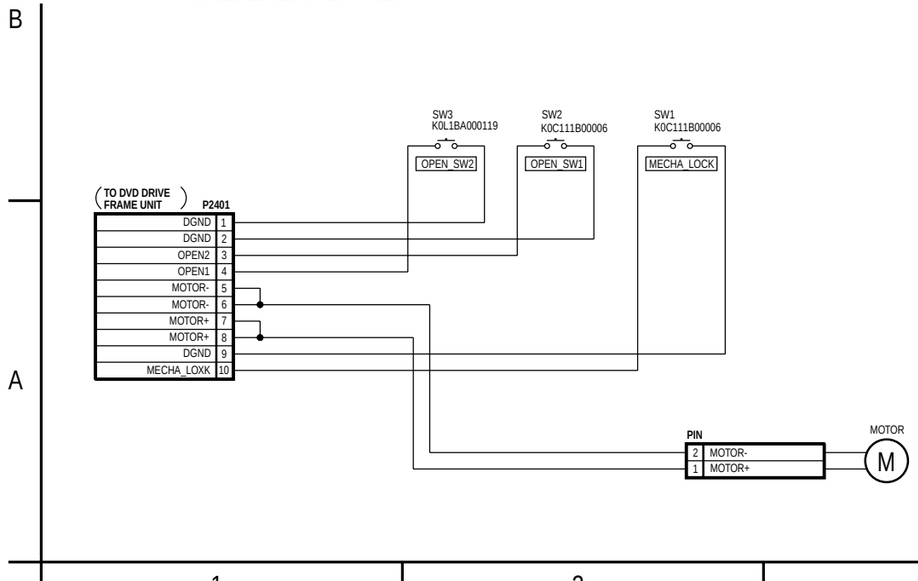
**"FOR REFERENCE ONLY"**




## DISK COVER LOCK SCHEMATIC DIAGRAM

NOTE: DISK COVER LOCK UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.

**"FOR REFERENCE ONLY"**




**LSJB8317**

**JACK SCHEMATIC DIAGRAM**
**EVF BACKLIGHT SCHEMATIC DIAGRAM**
**DISK COVER LOCK SCHEMATIC DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

NOTE: For placing a purchase order of the parts,
be sure to use the part number listed in the parts list.
Do not use the part number on this diagram.

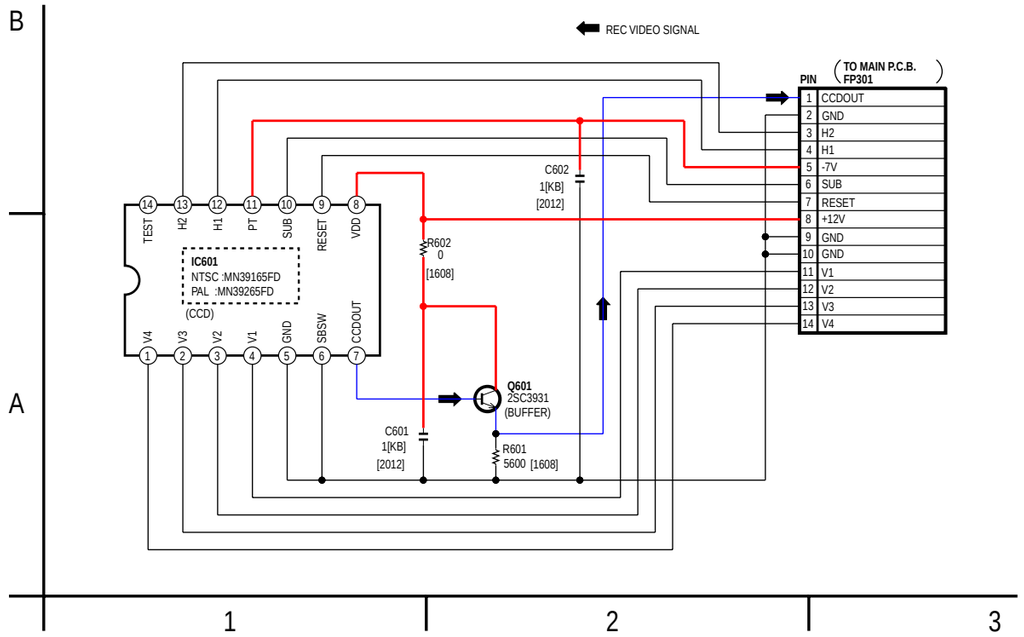
NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

## CCD SCHEMATIC DIAGRAM

**"FOR REFERENCE ONLY"**

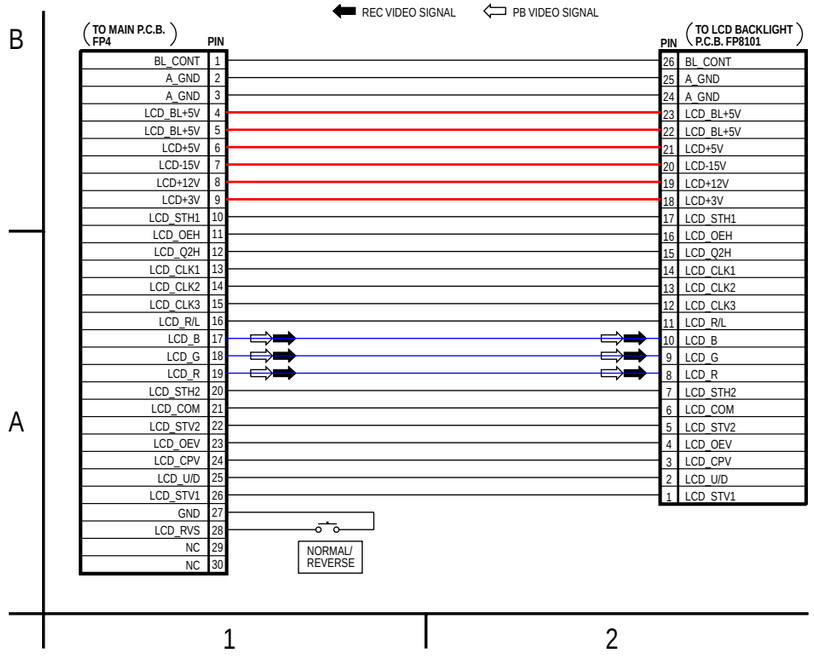
NOTE:
CCD P.C.B. IS NOT SERVICEABLE AND IS
SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.




## LCD SW SCHEMATIC DIAGRAM

**"FOR REFERENCE ONLY"**

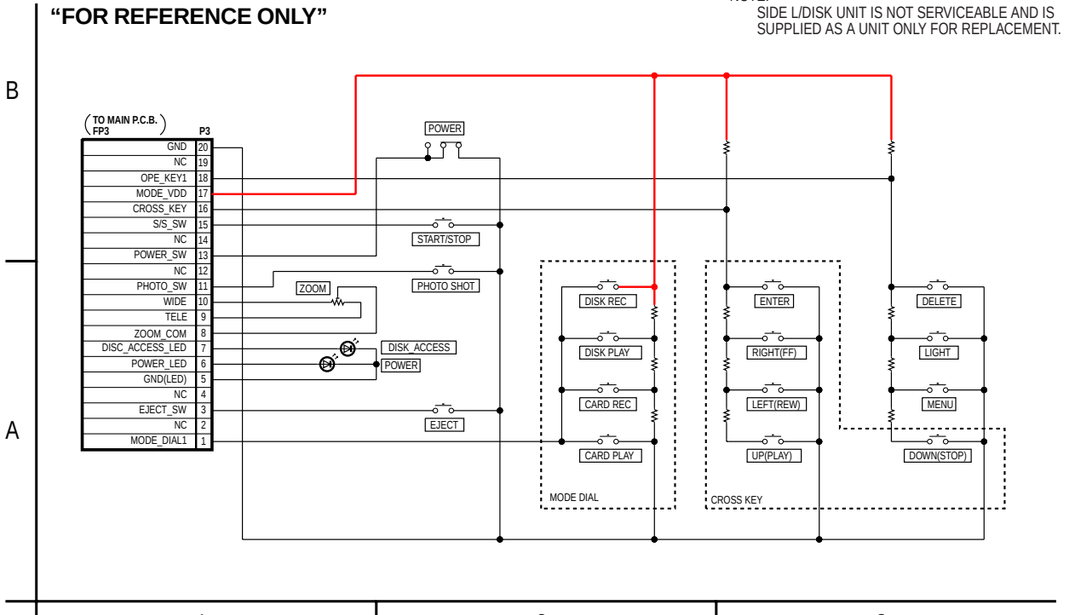
NOTE:
LCD SW IS NOT SERVICEABLE AND IS SUPPLIED AS
A LCD SHAFT CASE UNIT ONLY FOR REPLACEMENT.




## SIDE L / DISK SCHEMATIC DIAGRAM

**"FOR REFERENCE ONLY"**

NOTE:
SIDE L/DISK UNIT IS NOT SERVICEABLE AND IS
SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.



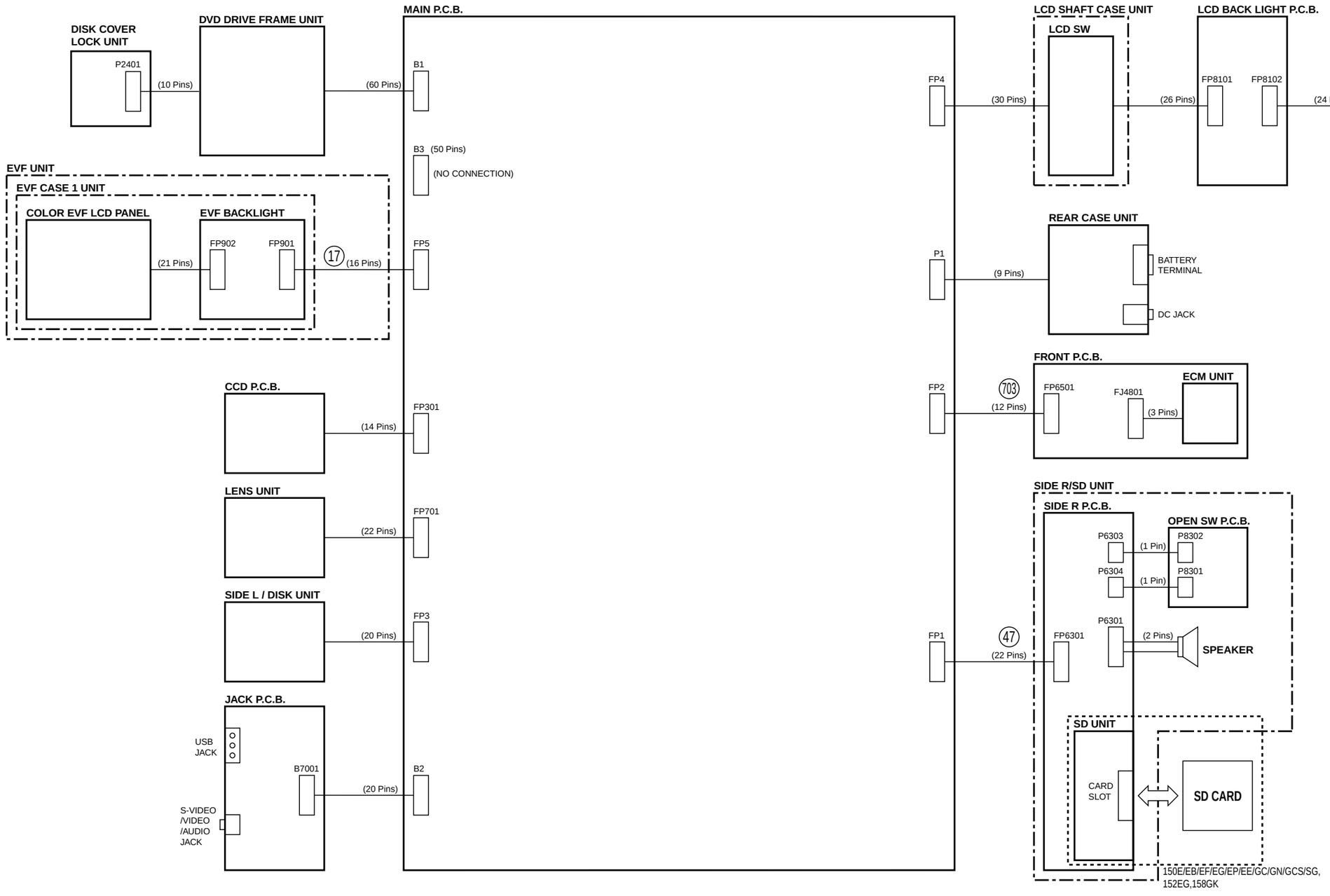

**CCD SCHEMATIC DIAGRAM**
**LCD SW SCHEMATIC DIAGRAM**
**SIDE L / DISK SCHEMATIC DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE**
**/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# INTERCONNECTION SCHEMATIC DIAGRAM

NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



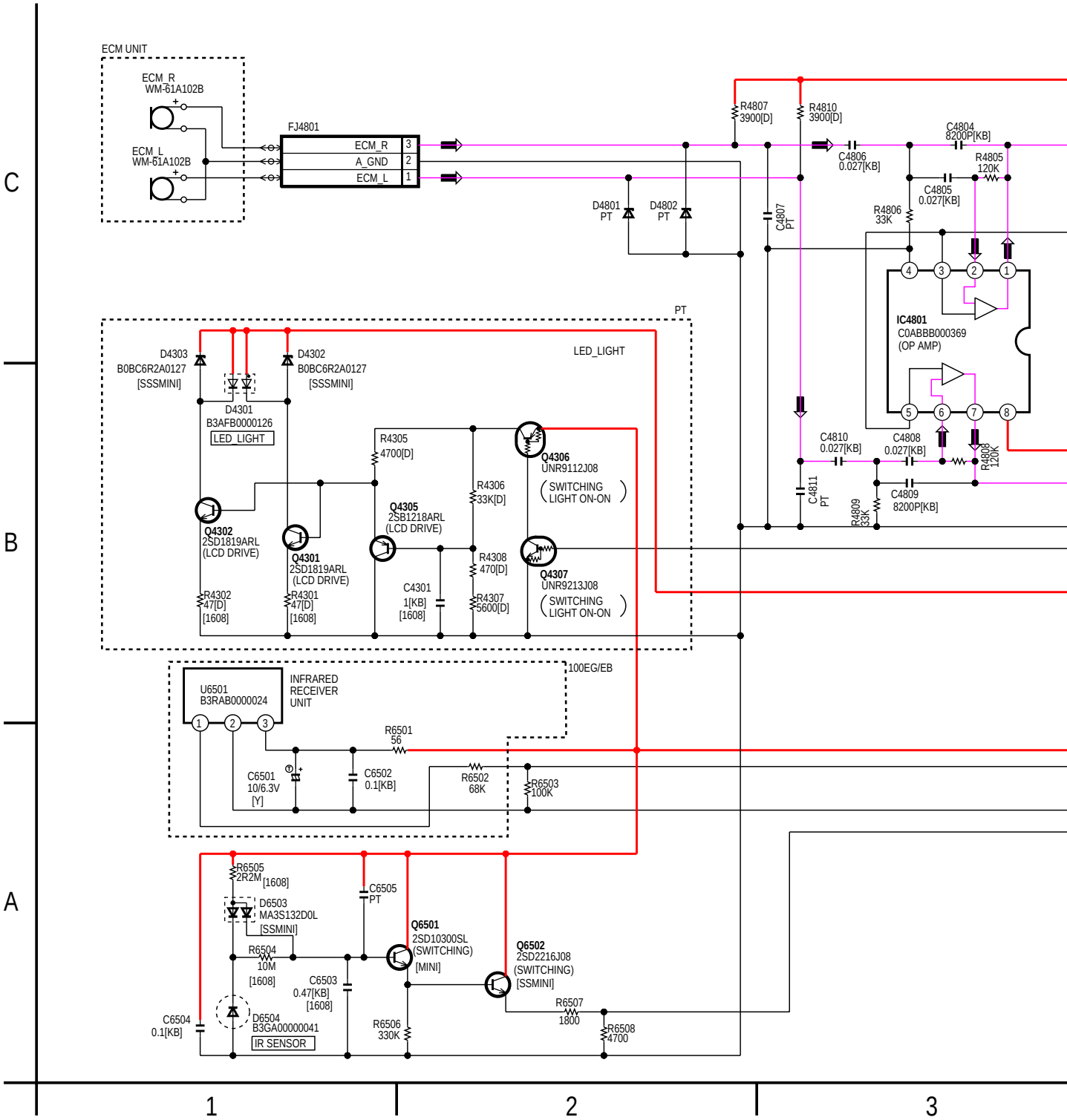

**INTERCONNECTION SCHEMATIC DIAGRAM**

**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# 12.2. FRONT SCHEMATIC DIAGRAM

## FRONT SCHEMATIC DIAGRAM

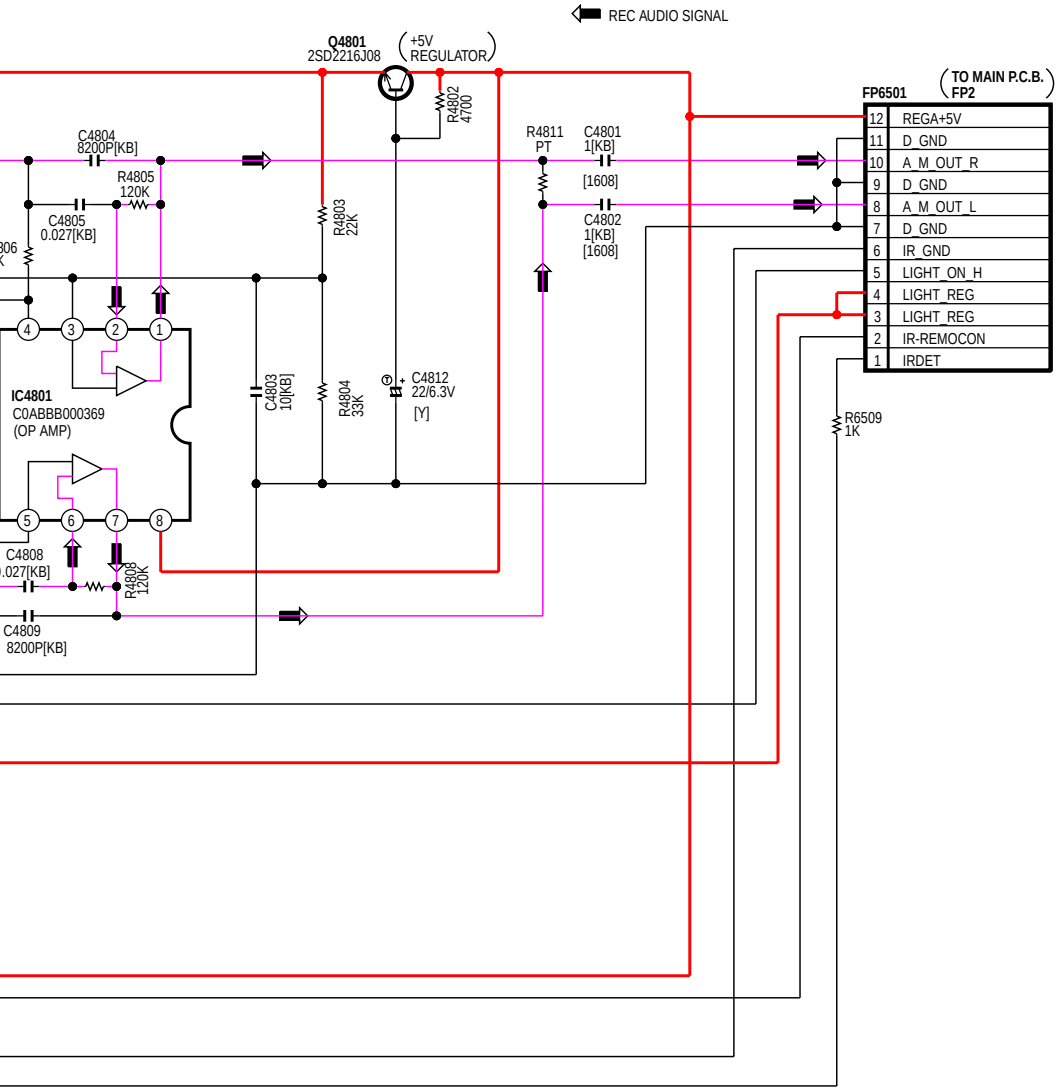
NOTE: For placing a purcl
be sure to use the
Do not use the par



NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.



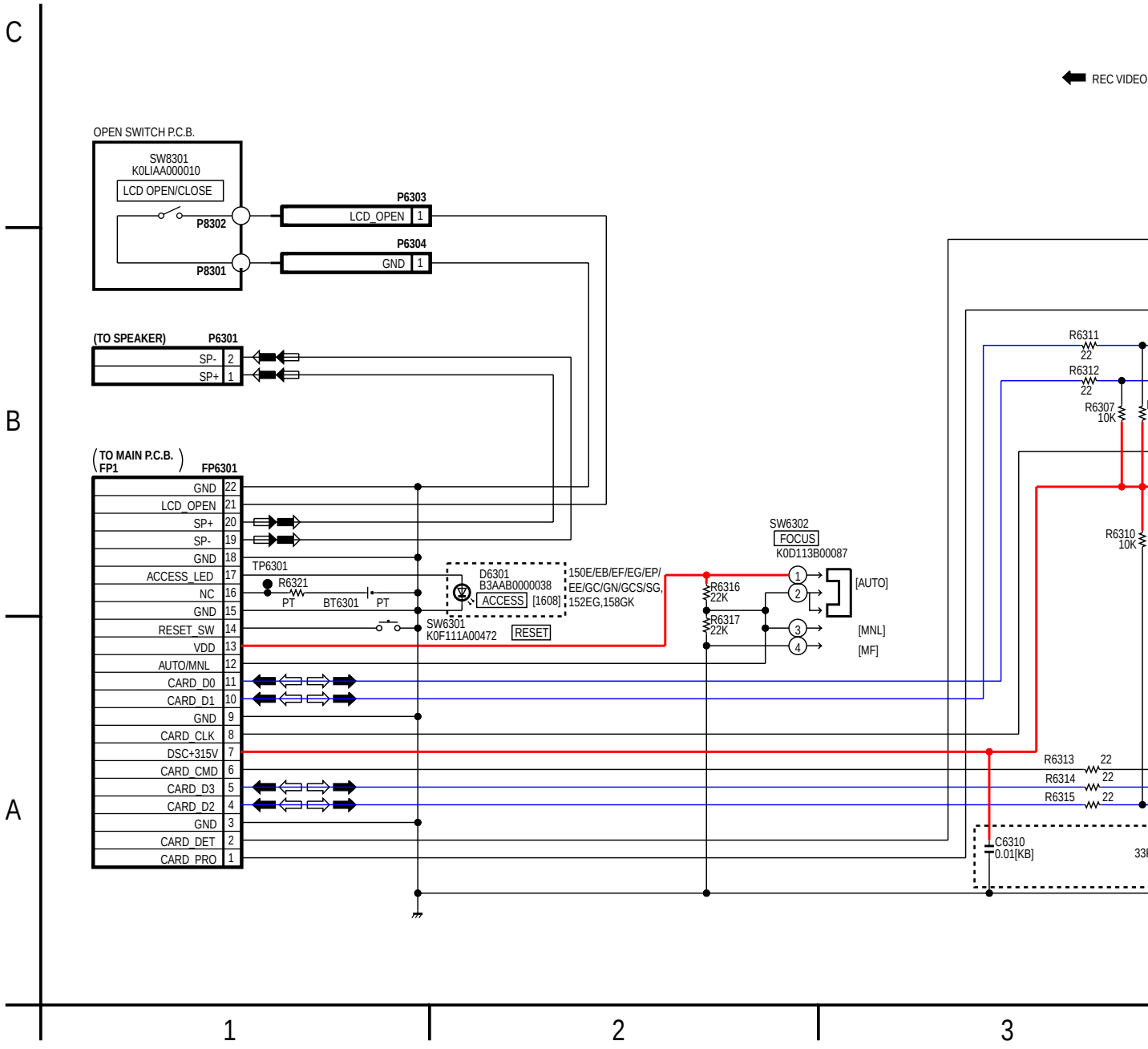

3 4 5

**LINK TO VOLTAGE CHART**
**LSJB8316**
**FRONT SCHEMATIC DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# 12.3. SIDE R SCHEMATIC DIAGRAM

## SIDE R SCHEMATIC DIAGRAM

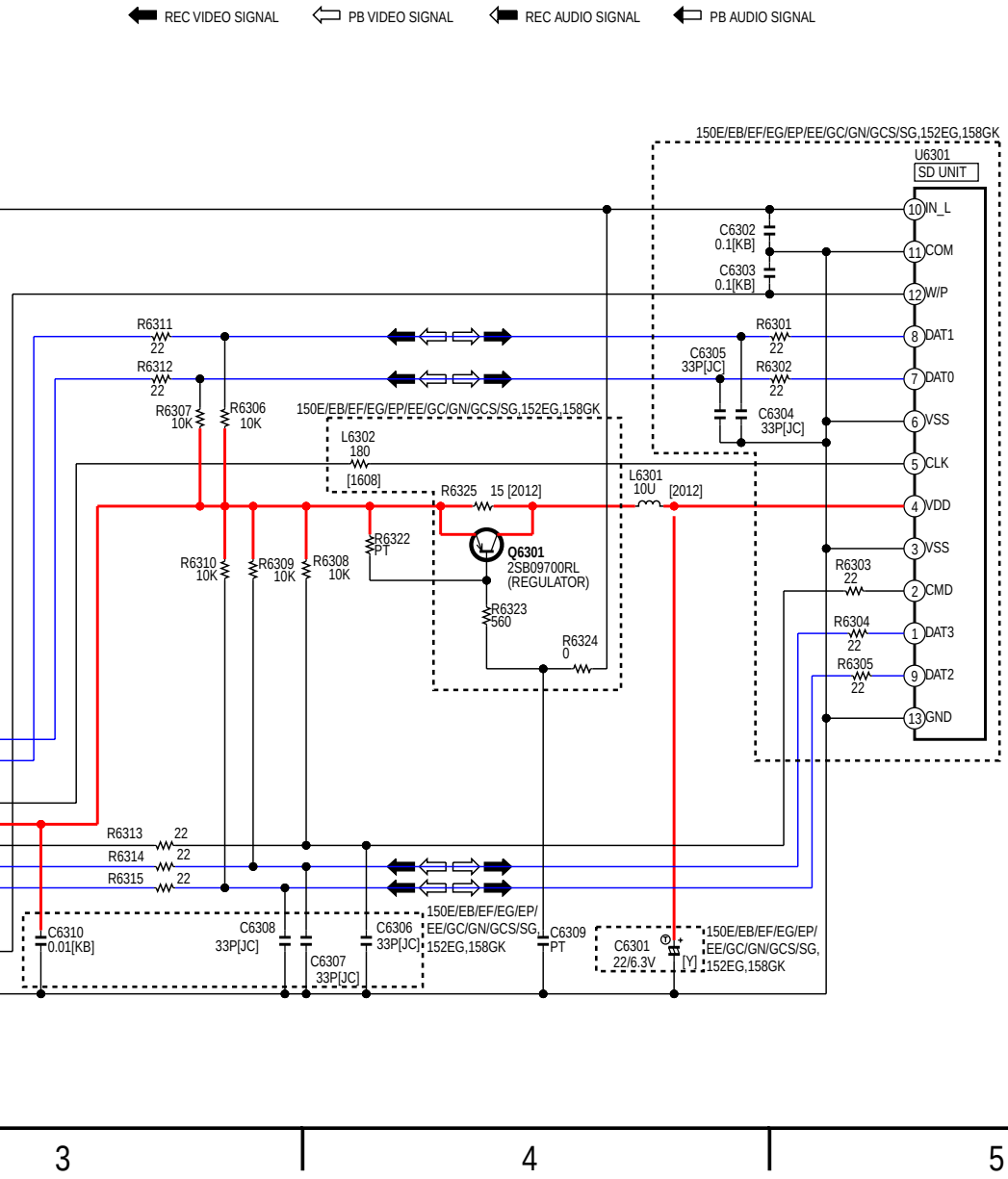
NOTE: For placing a purcl
be sure to use the
Do not use the par



NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.




3 4 5

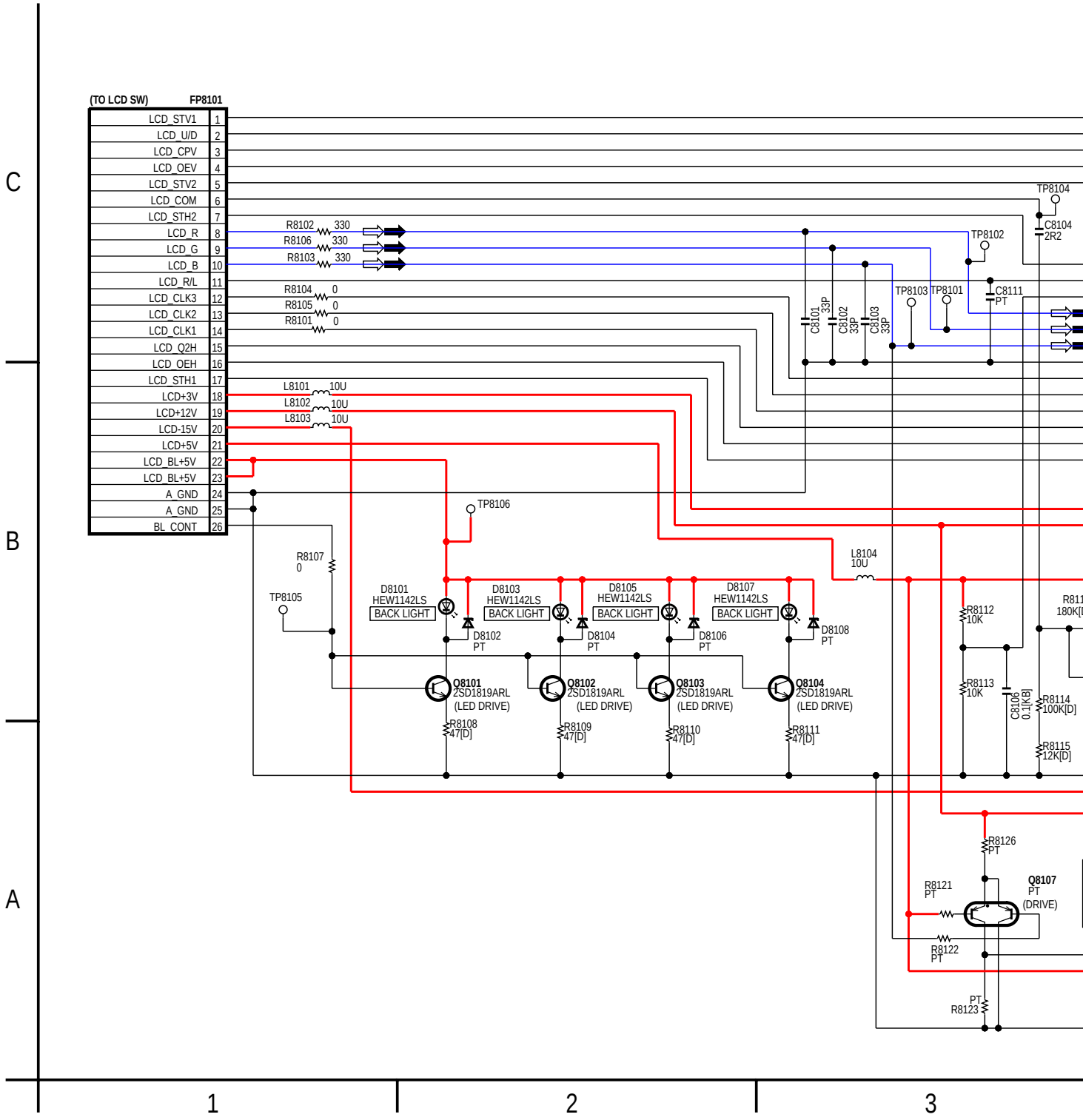
**LSJB8339**
**SIDE R SCHEMATIC DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# 12.4. LCD BACKLIGHT SCHEMATIC DIAGRAM

## LCD BACKLIGHT SCHEMATIC DIAGRAM

NOTE:
ALL INDIVIDUAL PARTS EXCEPT D8101, D8103, D8105, AND D8107 ON LCD BACKLIGHT P.C.B. ARE SUPPLIED AS REPLACEMENT PARTS. WHEN SERVICING THESE PARTS, REPLACE LCD BACKLIGHT P.C.B. INSTEAD OF INDIVIDUAL PARTS.

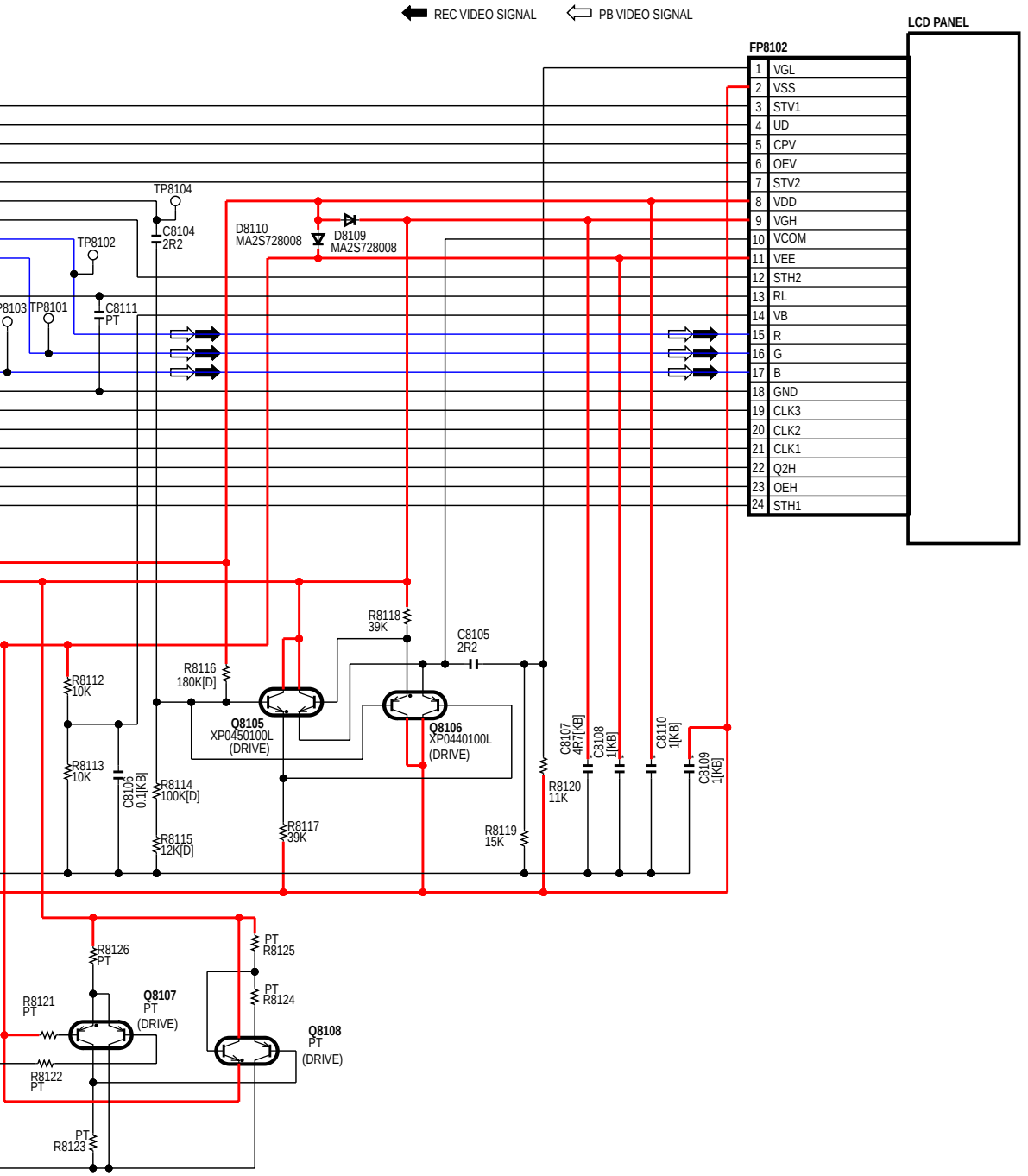
NOTE: For placing a purcl
be sure to use the
Do not use the par



NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE:
PARTS MARKED "PT" ARE NOT USED.

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.




3 4 5

**LINK TO VOLTAGE CHART**

**LSJB8318**

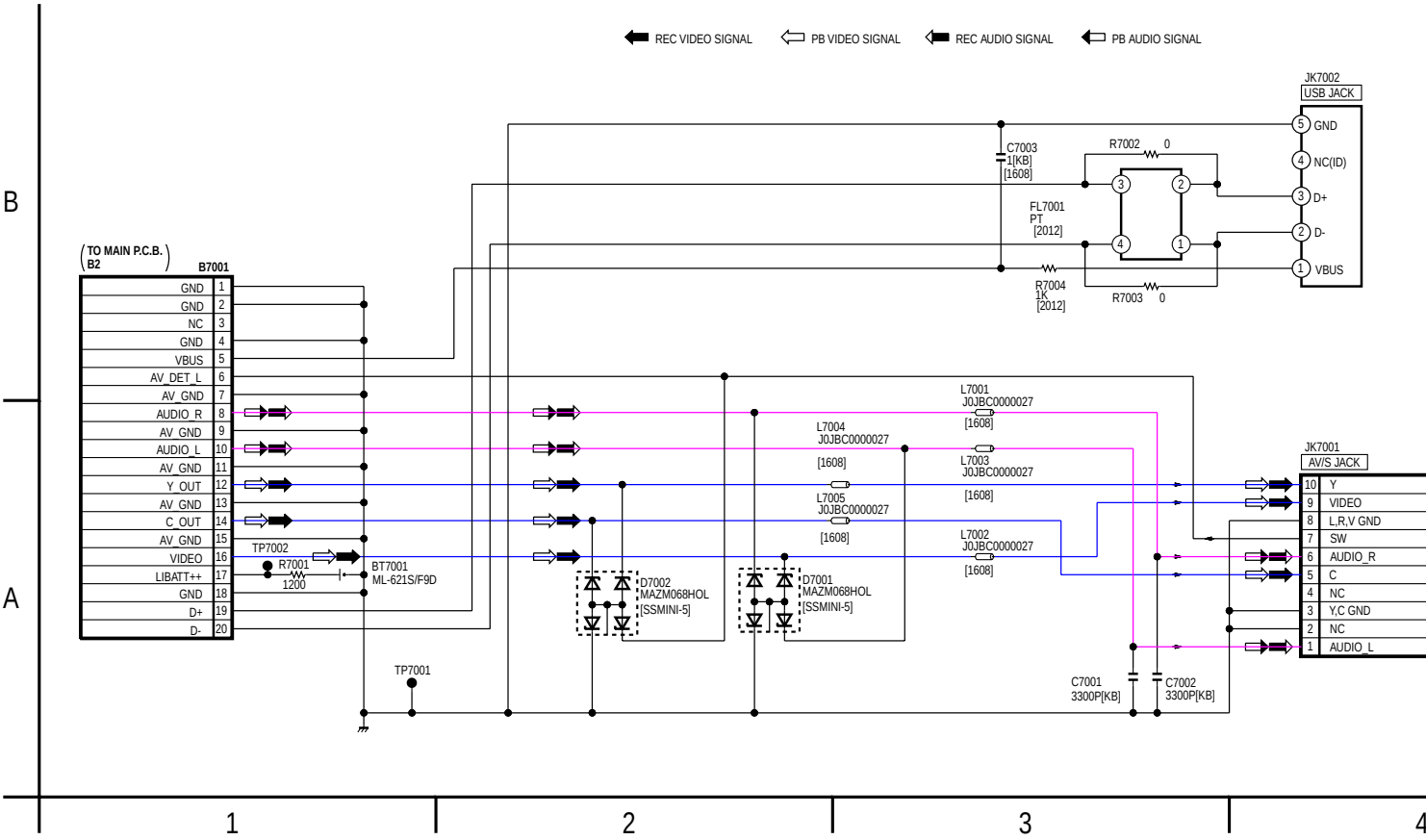
**LCD BACKLIGHT SCHEMATIC DIAGRAM**

**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# 12.5. JACK / EVF BACKLIGHT / DISK COVER LOCK SCHEMATIC DIAGRAMS

NOTE: For placing a purcl
be sure to use the
Do not use the par

## JACK SCHEMATIC DIAGRAM

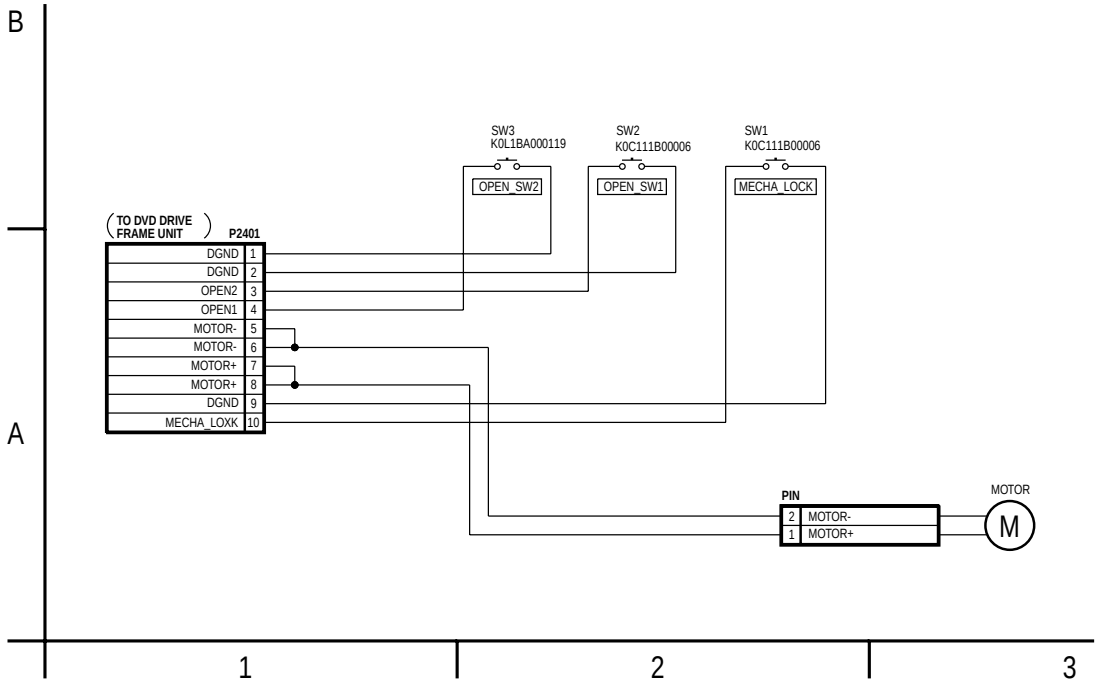



LSJE

## DISK COVER LOCK SCHEMATIC DIAGRAM

**"FOR REFERENCE ONLY"**

NOTE:
DISK COVER LOCK UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.



NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

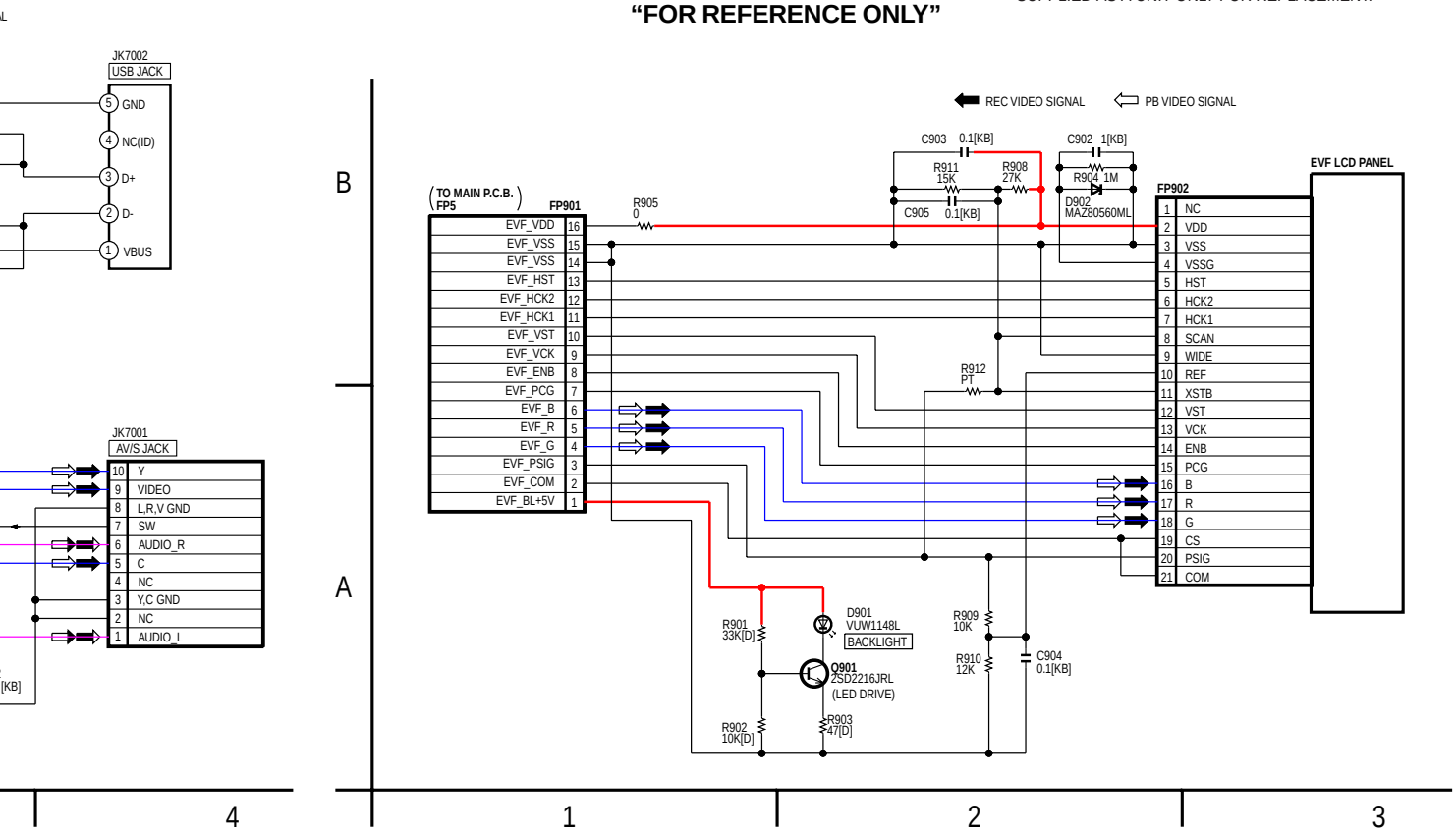
NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

## EVF BACKLIGHT SCHEMATIC DIAGRAM

NOTE: EVF BACKLIGHT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.

**"FOR REFERENCE ONLY"**




LSJB8317

**JACK SCHEMATIC DIAGRAM**
**EVF BACKLIGHT SCHEMATIC DIAGRAM**
**DISK COVER LOCK SCHEMATIC DIAGRAM**

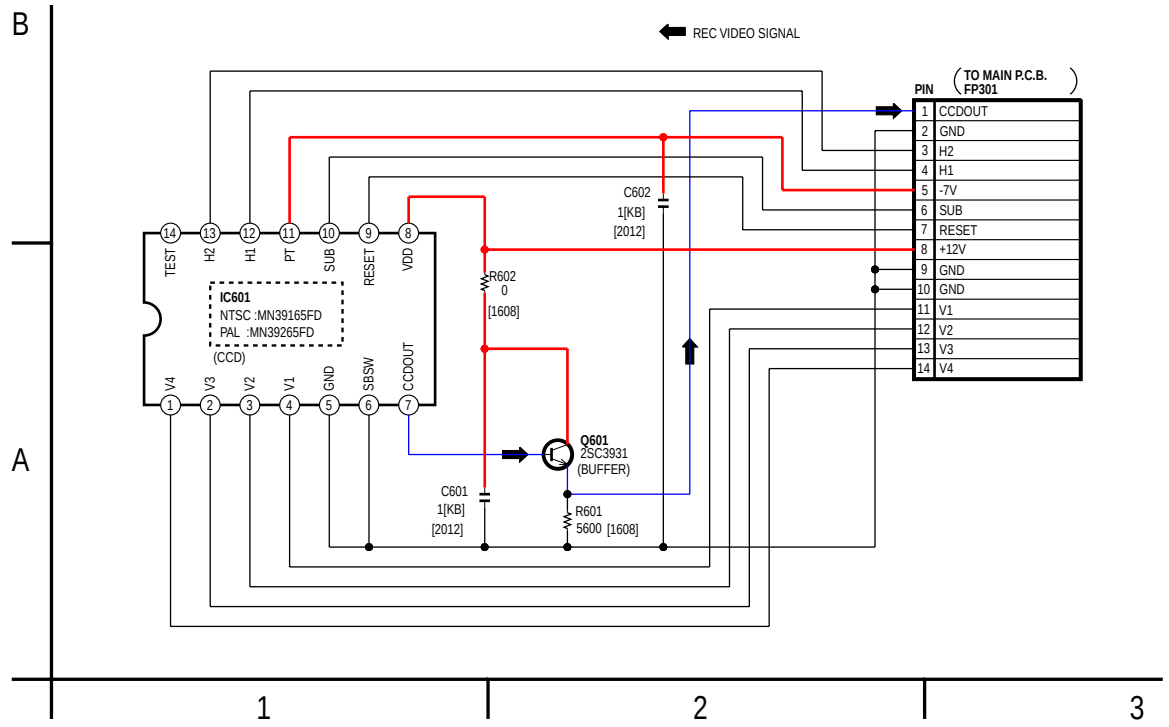
# 12.6. CCD / LCD SW / SIDE L/DISK SCHEMATIC DIAGRAMS

NOTE: For placing a purcl
be sure to use the
Do not use the par

## CCD SCHEMATIC DIAGRAM

**"FOR REFERENCE ONLY"**

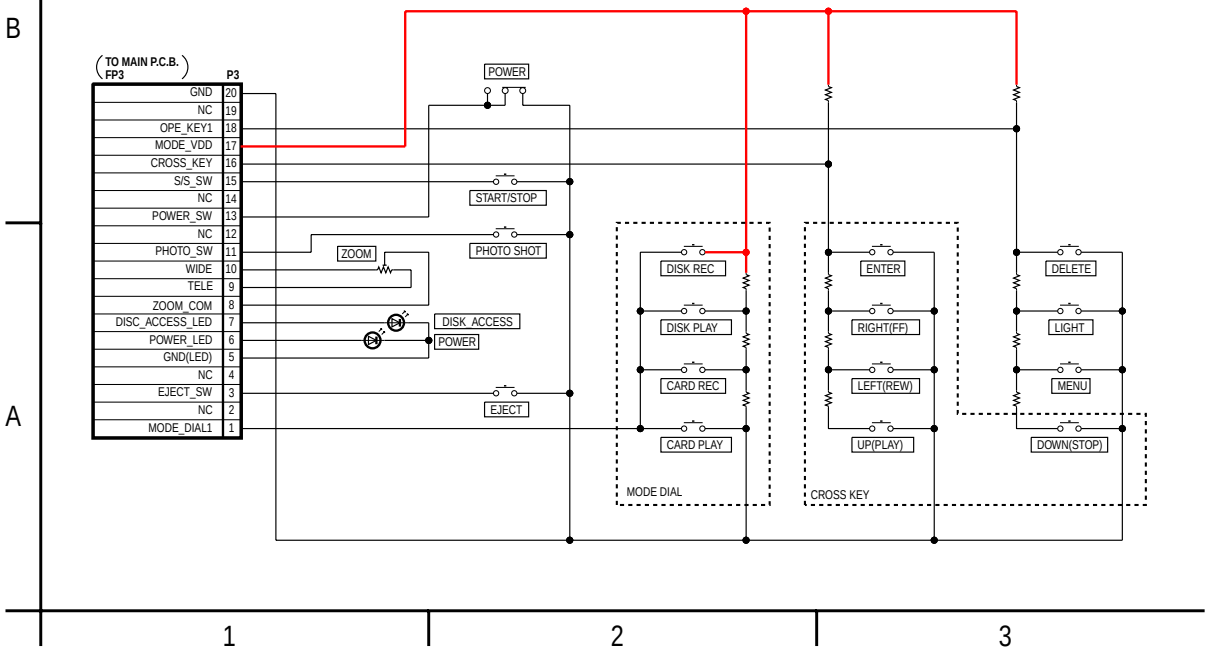
NOTE:
CCD P.C.B. IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.




## SIDE L / DISK SCHEMATIC DIAGRAM

**"FOR REFERENCE ONLY"**

NOTE:
SIDE L/DISK UNIT IS NOT SERVICEABLE AND IS SUPPLIED AS A UNIT ONLY FOR REPLACEMENT.



NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

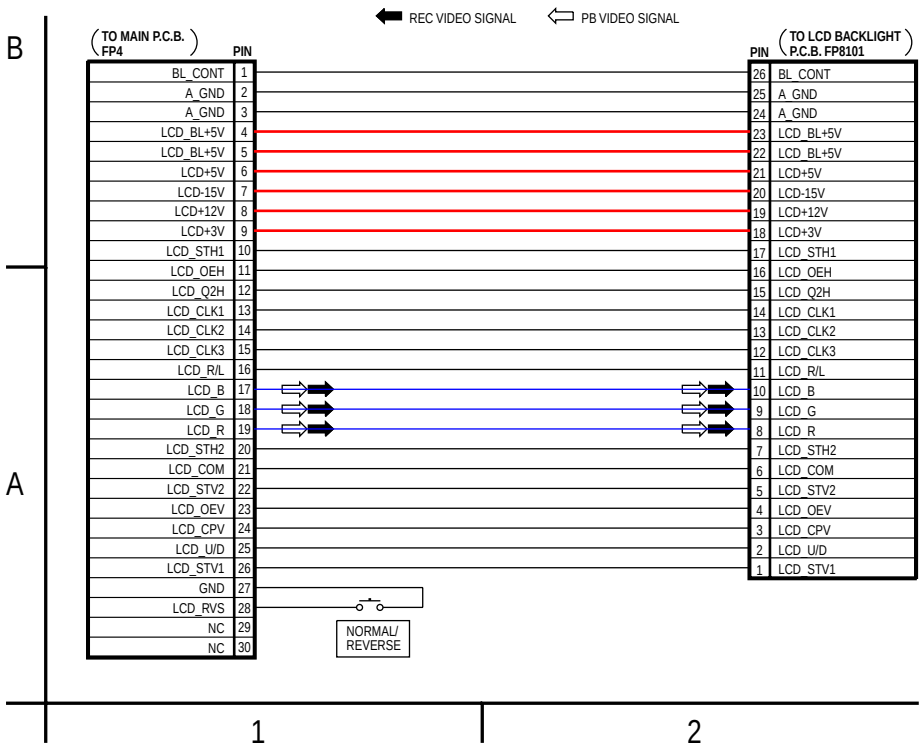
NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.

## LCD SW SCHEMATIC DIAGRAM

**"FOR REFERENCE ONLY"**

NOTE: LCD SW IS NOT SERVICEABLE AND IS SUPPLIED AS A LCD SHAFT CASE UNIT ONLY FOR REPLACEMENT.

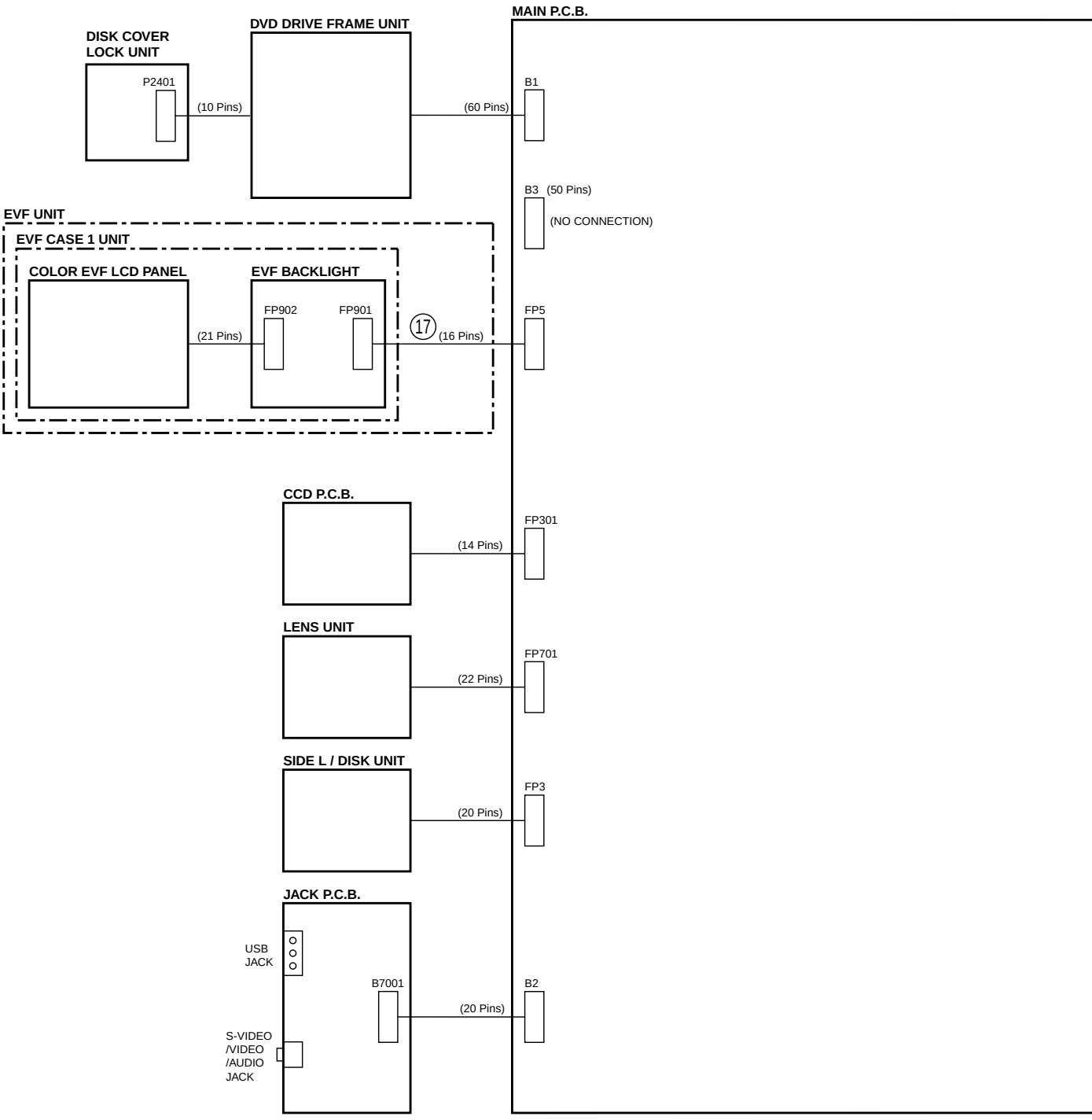



**CCD SCHEMATIC DIAGRAM**
**LCD SW SCHEMATIC DIAGRAM**
**SIDE L / DISK SCHEMATIC DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# 12.7. INTERCONNECTION SCHEMATIC DIAGRAM

## INTERCONNECTION SCHEMATIC DIAGRAM

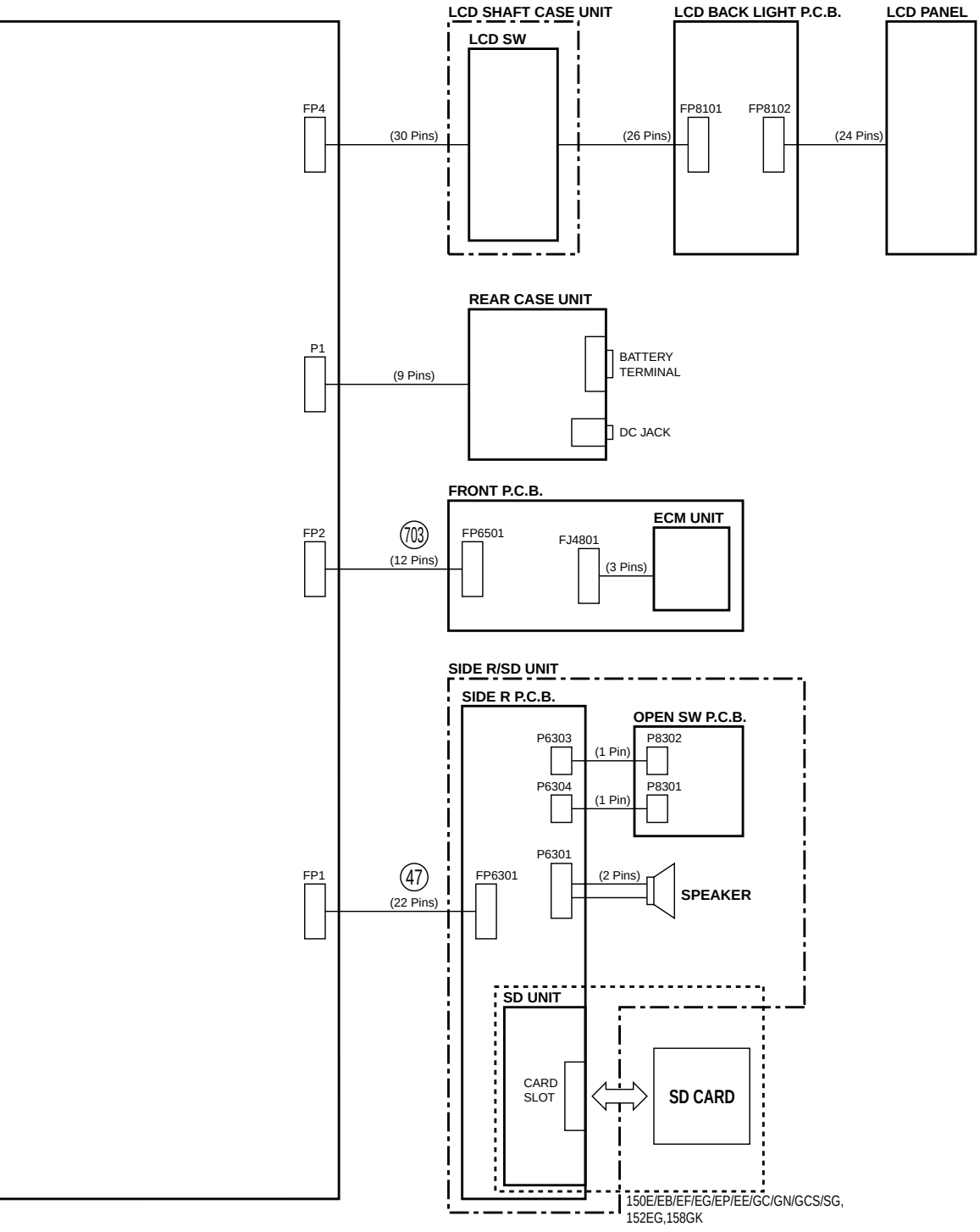
NOTE: For placing a purcl
be sure to use the
Do not use the par



NOTE: For placing a purchase order of the parts, be sure to use the part number listed in the parts list. Do not use the part number on this diagram.

NOTE: PARTS MARKED "PT" ARE NOT USED.

NOTE: FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES, REFER TO BEGINNING OF SCHEMATIC SECTION.




**INTERCONNECTION SCHEMATIC DIAGRAM**

**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

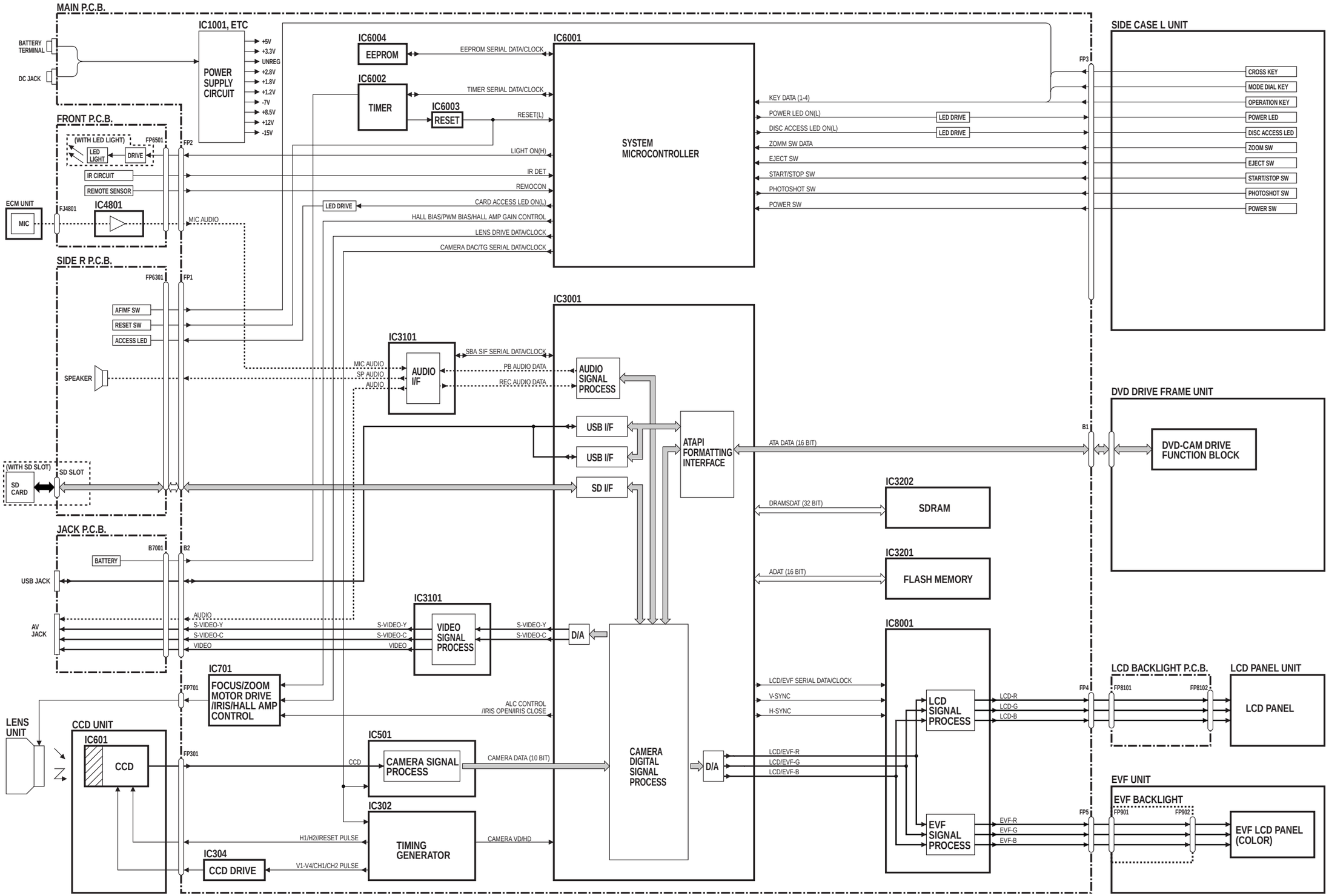
## LCD BACKLIGHT P.C.B.

| MODE / PIN NO. | REC | PLAY |
|---|---|---|
| Q8101 | | |
| E | 0 | 0 |
| C | 0.1 | 0.1 |
| B | 3.1 | 3.1 |
| Q8102 | | |
| E | 0 | 0 |
| C | 0.1 | 0.1 |
| B | 1.9 | 1.9 |
| Q8103 | | |
| E | 12.0 | 12.0 |
| C | 11.9 | 11.9 |
| B | 11.2 | 11.2 |
| Q8104 | | |
| E | 3.2 | 3.2 |
| C | 3.1 | 3.1 |
| B | 2.4 | 2.4 |
| Q8105 | | |
| E | 7.3 | 7.3 |
| C | 11.9 | 11.9 |
| B | 7.9 | 7.9 |
| Q8106 | | |
| E | 0 | 0 |
| C | 7.9 | 7.9 |
| B | 0.5 | 0.5 |
| Q8107 | | |
| E | 0 | 0 |
| C | 0.1 | 0.1 |
| B | 1.9 | 1.9 |
| Q8108 | | |
| E | 4.9 | 4.9 |
| C | 4.9 | 4.9 |
| B | 4.2 | 4.2 |
| | | |
| TP8101 | 2.5 | 2.5 |
| TP8102 | 2.5 | 2.5 |
| TP8103 | 2.5 | 2.5 |
| TP8104 | 4.3 | 4.3 |
| TP8105 | 1.3 | 1.3 |
| TP8106 | 4.9 | 4.9 |

## FRONT P.C.B.

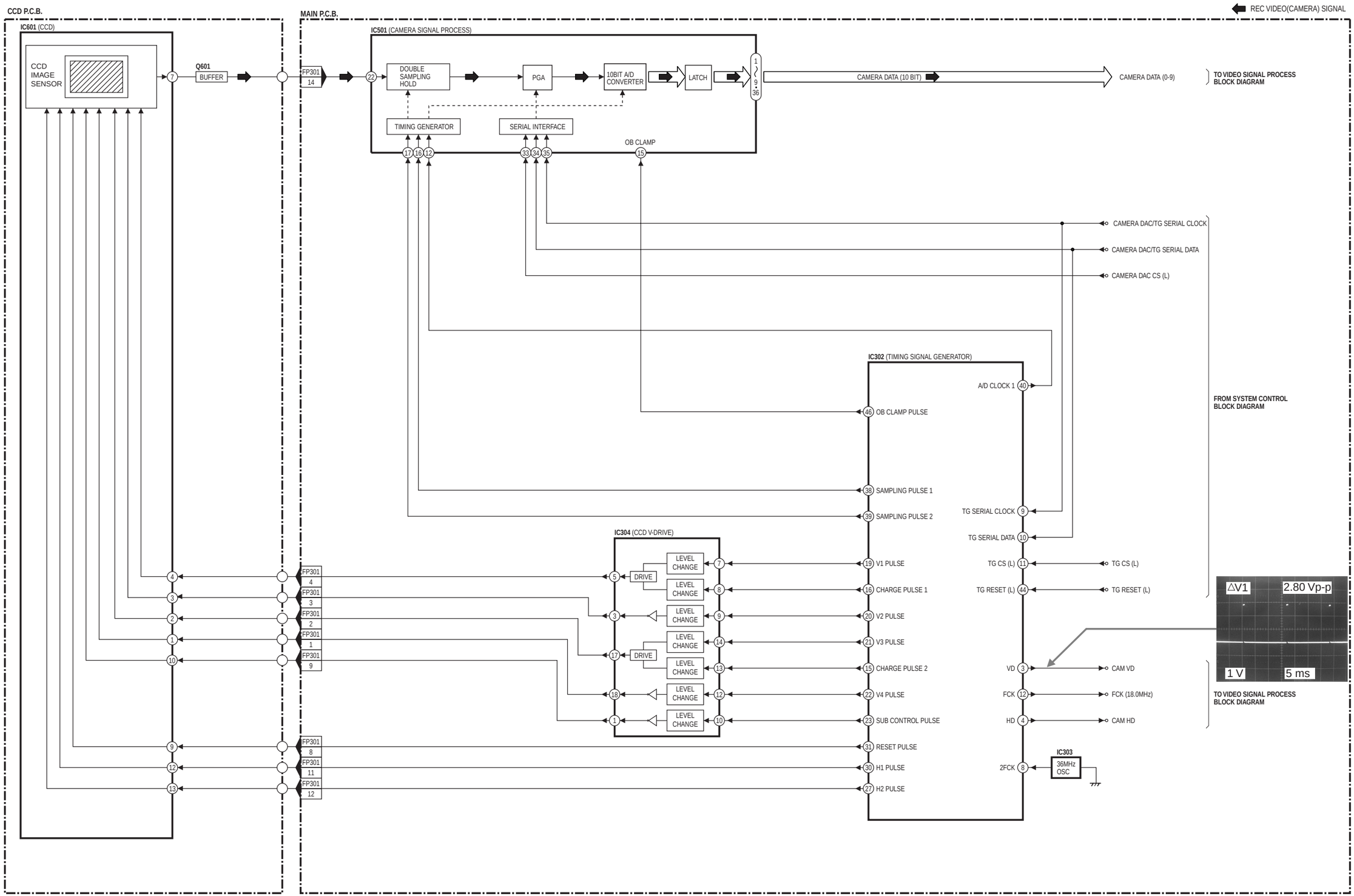
| MODE / PIN NO. | REC | PLAY |
|---|---|---|
| IC4801 | | |
| 1 | 2.5 | 2.5 |
| 2 | 2.5 | 2.5 |
| 3 | 2.5 | 2.5 |
| 4 | 0 | 0 |
| 5 | 2.5 | 2.5 |
| 6 | 2.5 | 2.5 |
| 7 | 2.5 | 2.5 |
| 8 | 4.8 | 4.8 |
| | | |
| Q4301 | | |
| E | 0 | 0 |
| C | 3.3 | 3.3 |
| B | 0 | 0 |
| Q4302 | | |
| E | 0 | 0 |
| C | 3.0 | 3.0 |
| B | 0 | 0 |
| Q4305 | | |
| E | 0 | 0 |
| C | 0 | 0 |
| B | 0 | 0 |
| Q4306 | | |
| E | 4.8 | 4.8 |
| C | 0 | 0 |
| B | 4.7 | 4.7 |
| Q4307 | | |
| E | 0 | 0 |
| C | 4.7 | 4.7 |
| B | 0 | 0 |
| Q4801 | | |
| E | 4.1 | 4.1 |
| C | 4.8 | 4.8 |
| B | 4.7 | 4.7 |
| Q6501 | | |
| E | 3.9 | 3.9 |
| C | 4.8 | 4.8 |
| B | 0 | 0 |
| Q6502 | | |
| E | 2.3 | 2.3 |
| C | 4.8 | 4.8 |
| B | 2.8 | 2.8 |

# OVERALL BLOCK DIAGRAM



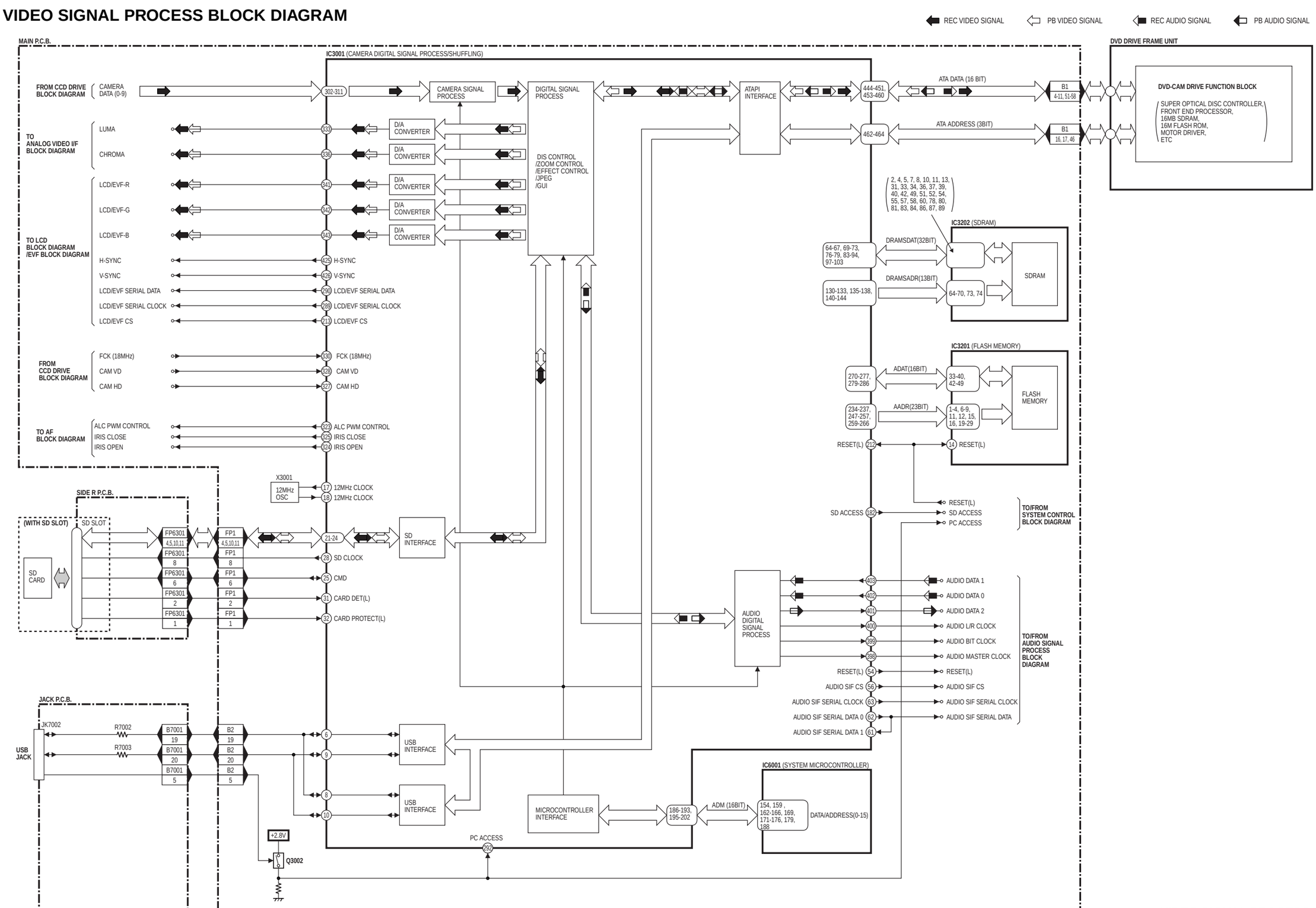

**OVERALL BLOCK DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# CCD DRIVE BLOCK DIAGRAM




**CCD DRIVE BLOCK DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# VIDEO SIGNAL PROCESS BLOCK DIAGRAM



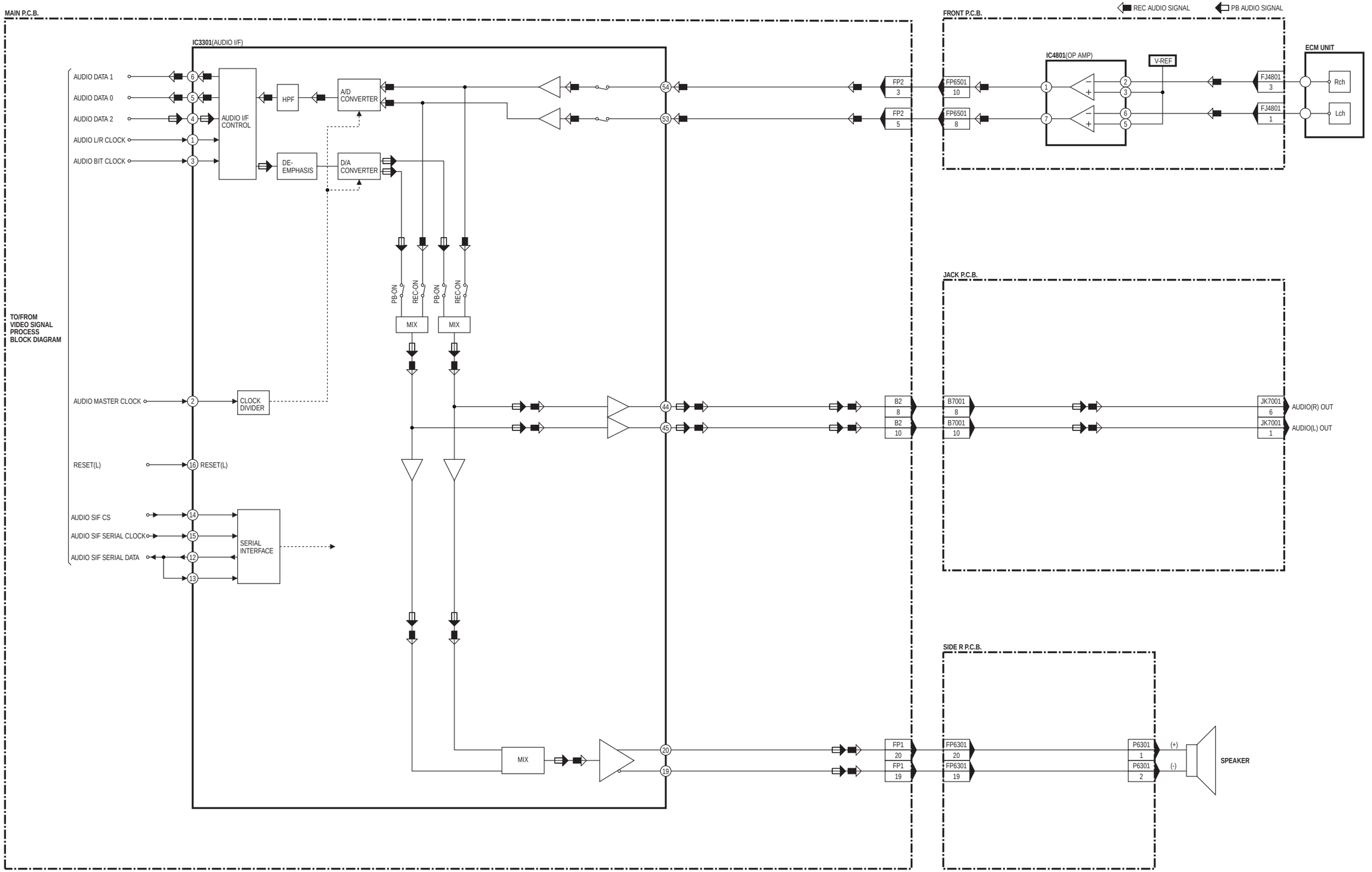

**VIDEO SIGNAL PROCESS BLOCK DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE**
**/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# ANALOG VIDEO I/F BLOCK DIAGRAM




**ANALOG VIDEO I/F BLOCK DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE**
**/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

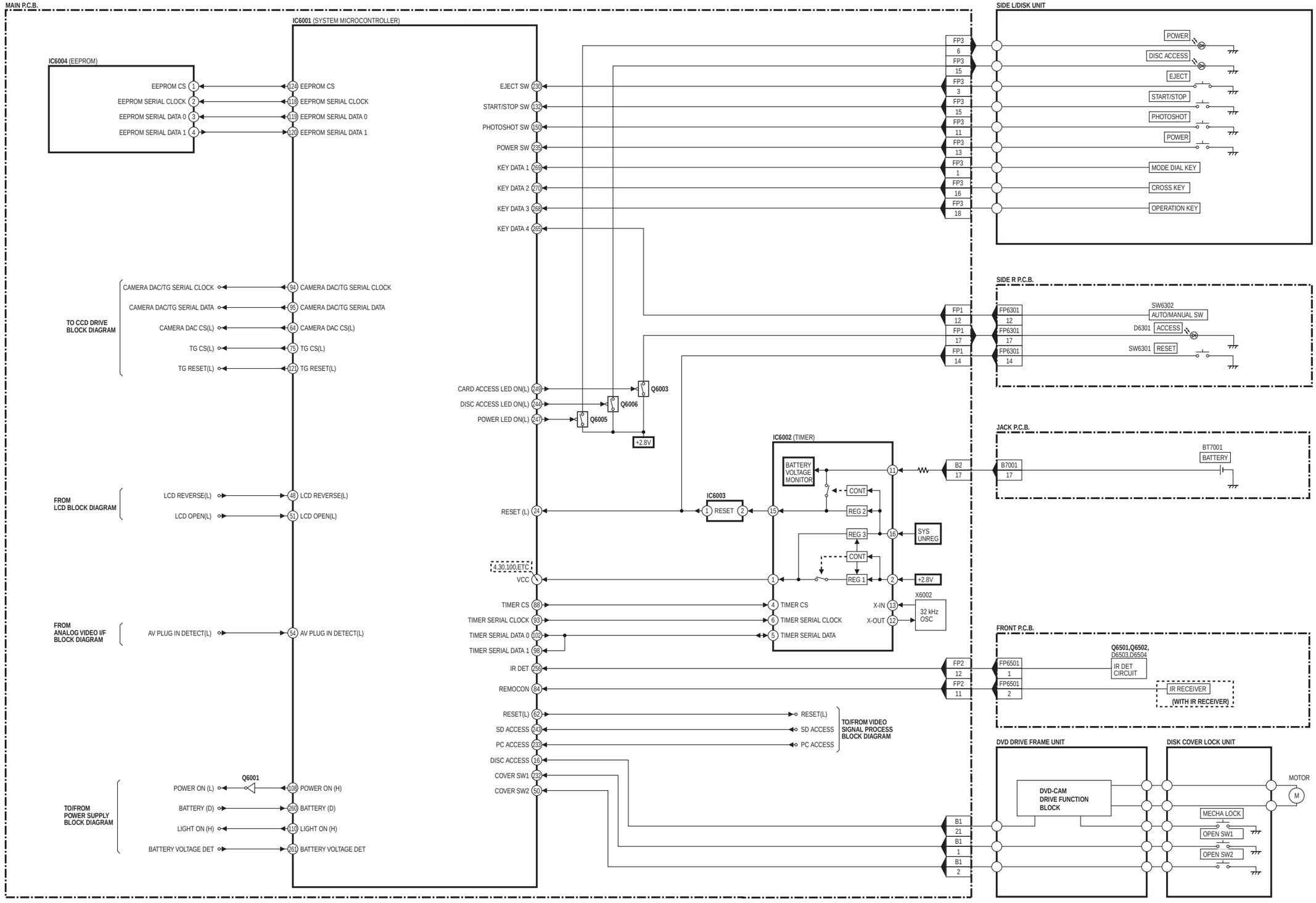
# AUDIO SIGNAL PROCESS BLOCK DIAGRAM




**AUDIO SIGNAL PROCESS BLOCK DIAGRAM**

**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE**
**/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

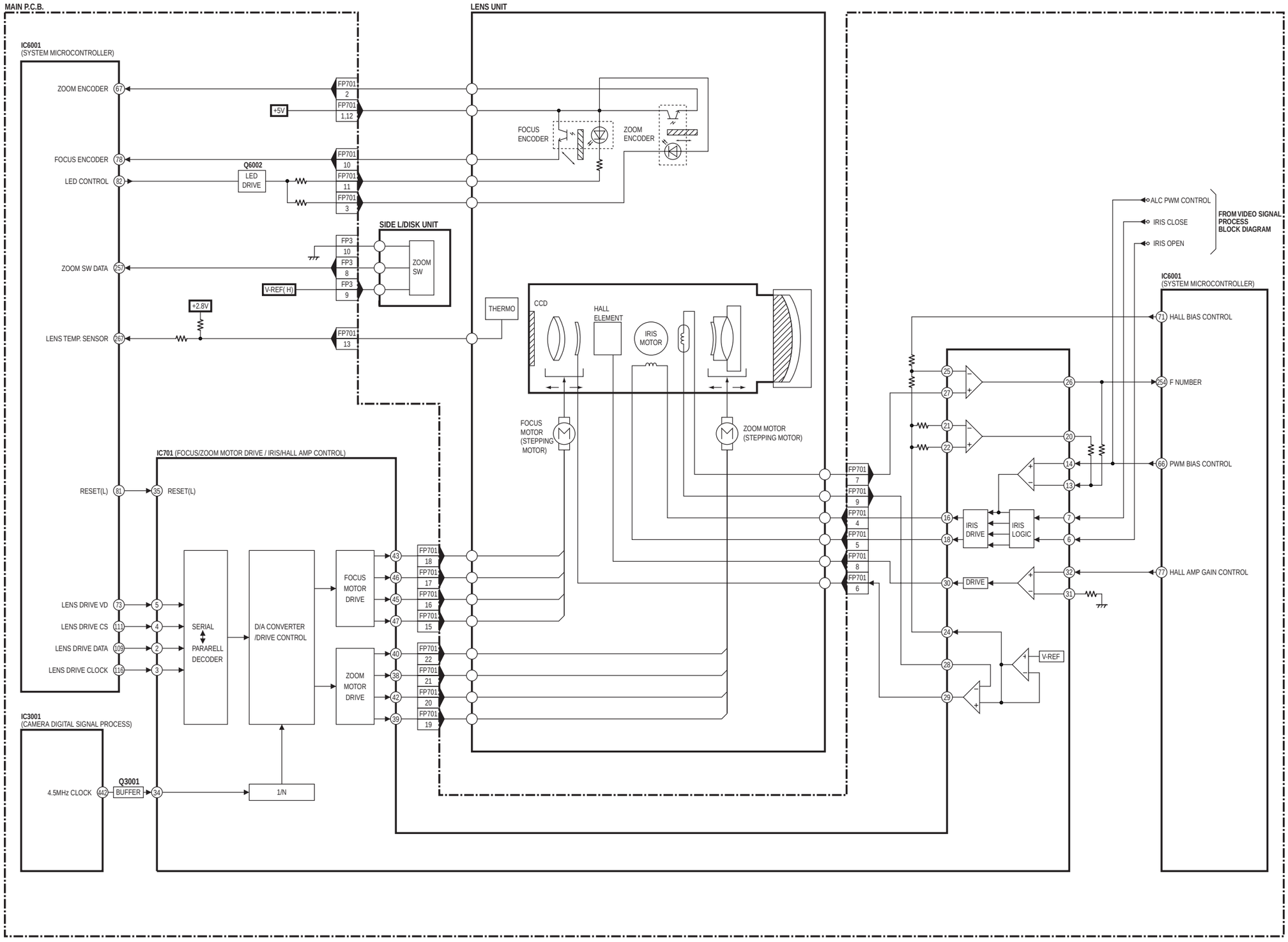
# SYSTEM CONTROL BLOCK DIAGRAM




**SYSTEM CONTROL BLOCK DIAGRAM**

**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

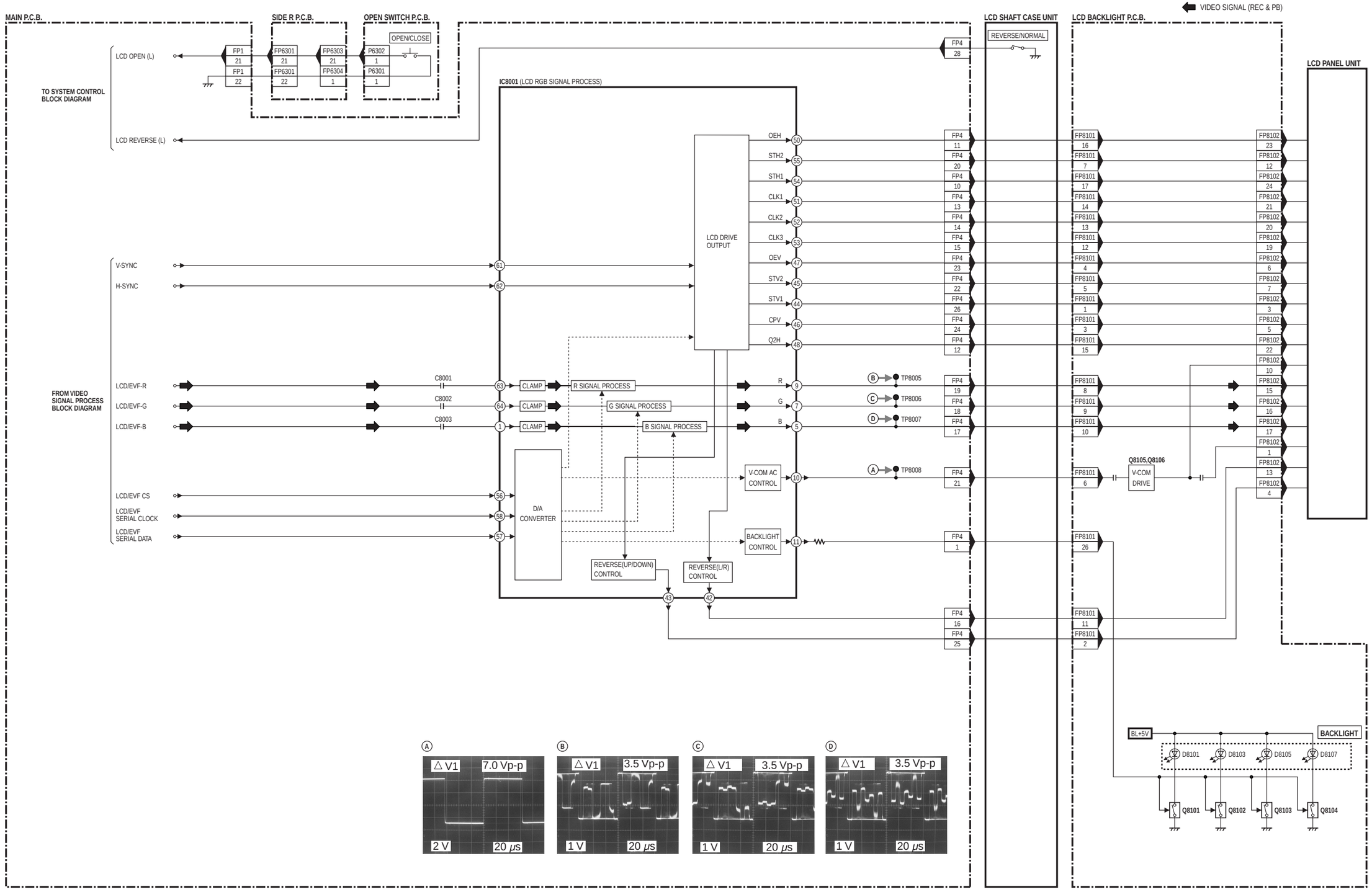
# AF BLOCK DIAGRAM




**AF BLOCK DIAGRAM**

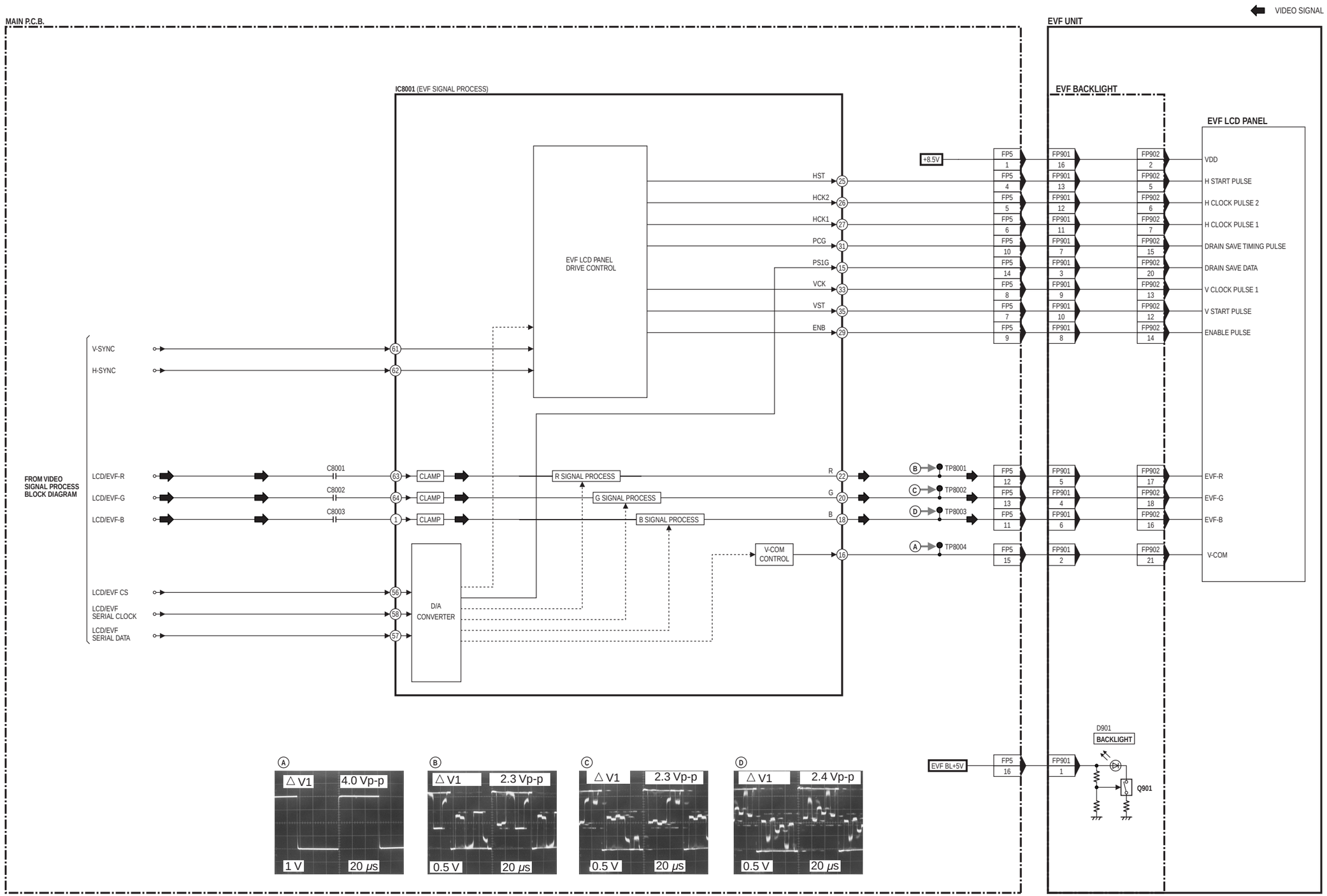
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# LCD DRIVE BLOCK DIAGRAM




**LCD DRIVE BLOCK DIAGRAM**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE**
**/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

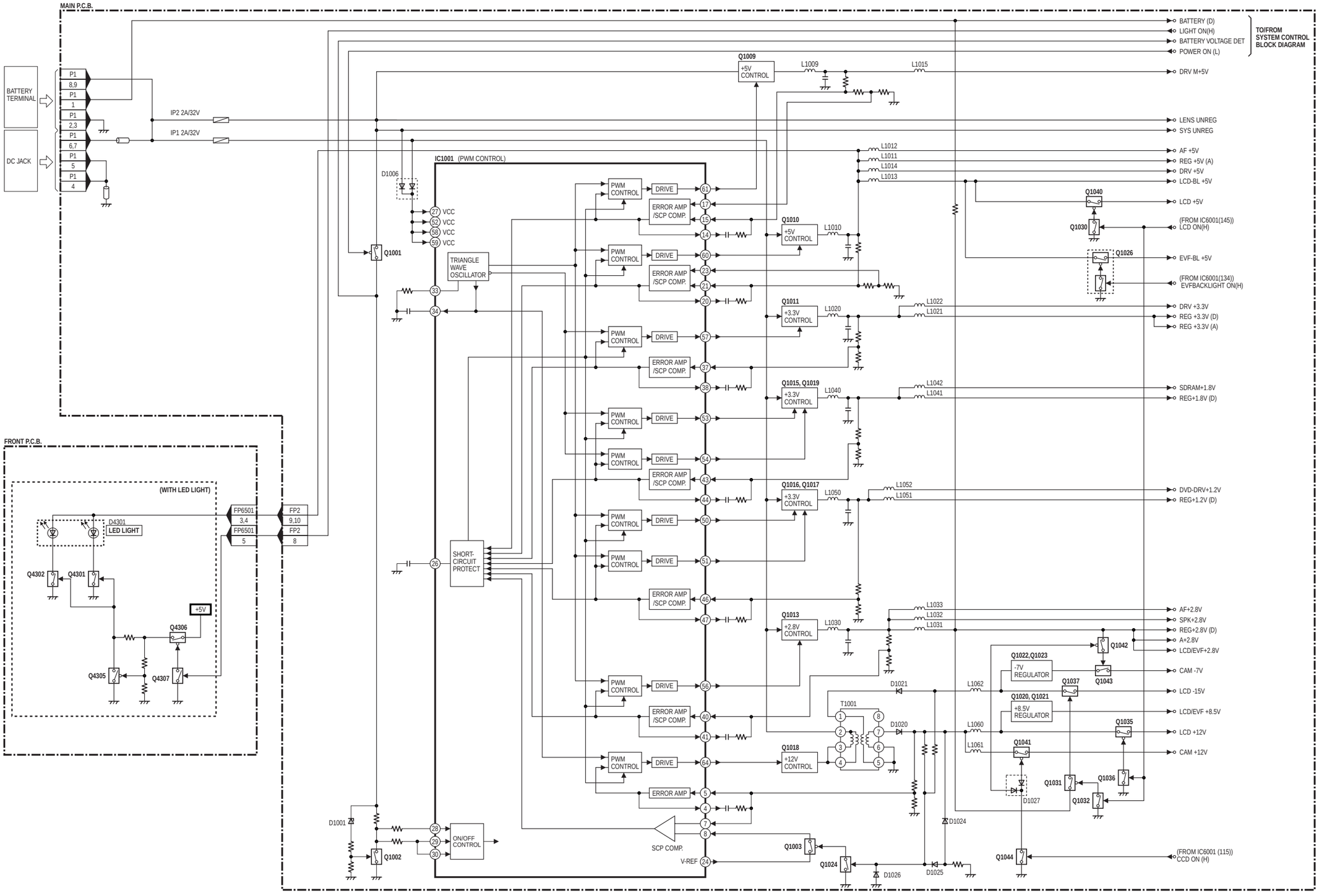
# EVF BLOCK DIAGRAM




**EVF BLOCK DIAGRAM**

**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

# POWER SUPPLY BLOCK DIAGRAM




**POWER SUPPLY BLOCK DIAGRAM**

**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE /VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**

**(1) Cleaning disc**

1) Use the provided disc cleaning cloth, or a soft, dry cloth to lightly clean the disc from the inner to outer edges in axial direction.

2) If the dirt cannot be removed with the above procedure, put a few droplets of absolute alcohol in a soft, dry cloth, and use it to lightly clean the disc from the inner to outer edges in axial direction.




Cleaning Disc

**(2) Cleaning optical pickup**

**Note:**
Do not clean the optical pickup needlessly. The optical pickup is a precision component. Repeated cleaning could cause a fault.

1) Attach the AC adapter/charger or battery (power supply), and then slide the DISC EJECT switch to open the disc insertion block.
2) Remove the AC adapter/charger or battery (power supply).

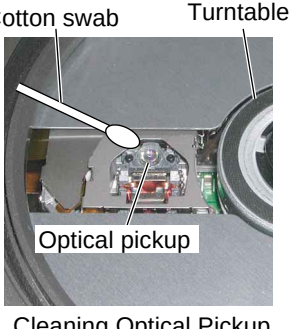
**Caution:**
Laser light striking the eye may cause your eyesight to be lost: For safety, be sure to remove any power supply (AC adaptor/charger, battery, etc.) from the DVD video camera/recorder before starting work.

**<CSA requirement>**

CAUTION: VISIBLE LASER RADIATION DO NOT STARE INTO THE BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS CLASS 2M

3) Check to see whether the optical pickup is dirty. If it is not dirty, use the following procedure to clean it:
   a) Apply one drop of absolute alcohol on a clean cotton swab (*1). Lens cleaner liquid for CD/DVD (generally available) may be substituted for absolute alcohol.
   b) Lightly swab the optical pickup to clean it. Using too much force during cleaning may cause a fault to occur.

*1: Always use a fresh cotton swab free from any additive or chemical.




Cleaning Optical Pickup

## MAIN PARTS PORTION

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | ④ | Top Cover Unit | 1 | (519), 5(533) | 1 |
| 2 | - | Front Case Ass'y | 1 | 3(519), 2(533), FP2, Hand Strap | 2 |
| 3 | - | Side R & LCD Ass'y | 1 | 3(519), 3(533), FP1, FP4 | 3 |
| 4 | - | Rear Case & EVF Ass'y | 1 | 6(519), FP5, P1 | 4 |
| 5 | - | Lens Ass'y | 1 | 2(519), FP301, FP701 | 5 |
| 6 | - | Main P.C.B. & Jack P.C.B. | 1 | (419), 5(519), FP3, B1 | 6 |
| 7 | ③ | Disc Cover Lock Unit | 1 | (419), (533), (544), Connector | 7 |
| 8 | ② | DVD Drive Frame Unit | 1 | 2(519) | 8 |
| 9 | ① | Side L/Disk Unit | 1 | 2(519), (533), (7) | - |

A B C D E F

**How to read chart shown above:**

A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
B: Ref No.
C: Part to be removed or installed.
D: Section No.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.
3(404)= 3 Screws (404), 2(L-1) = 2 Looking Tabs (L-1)
F: Refer to "Notes in chart."

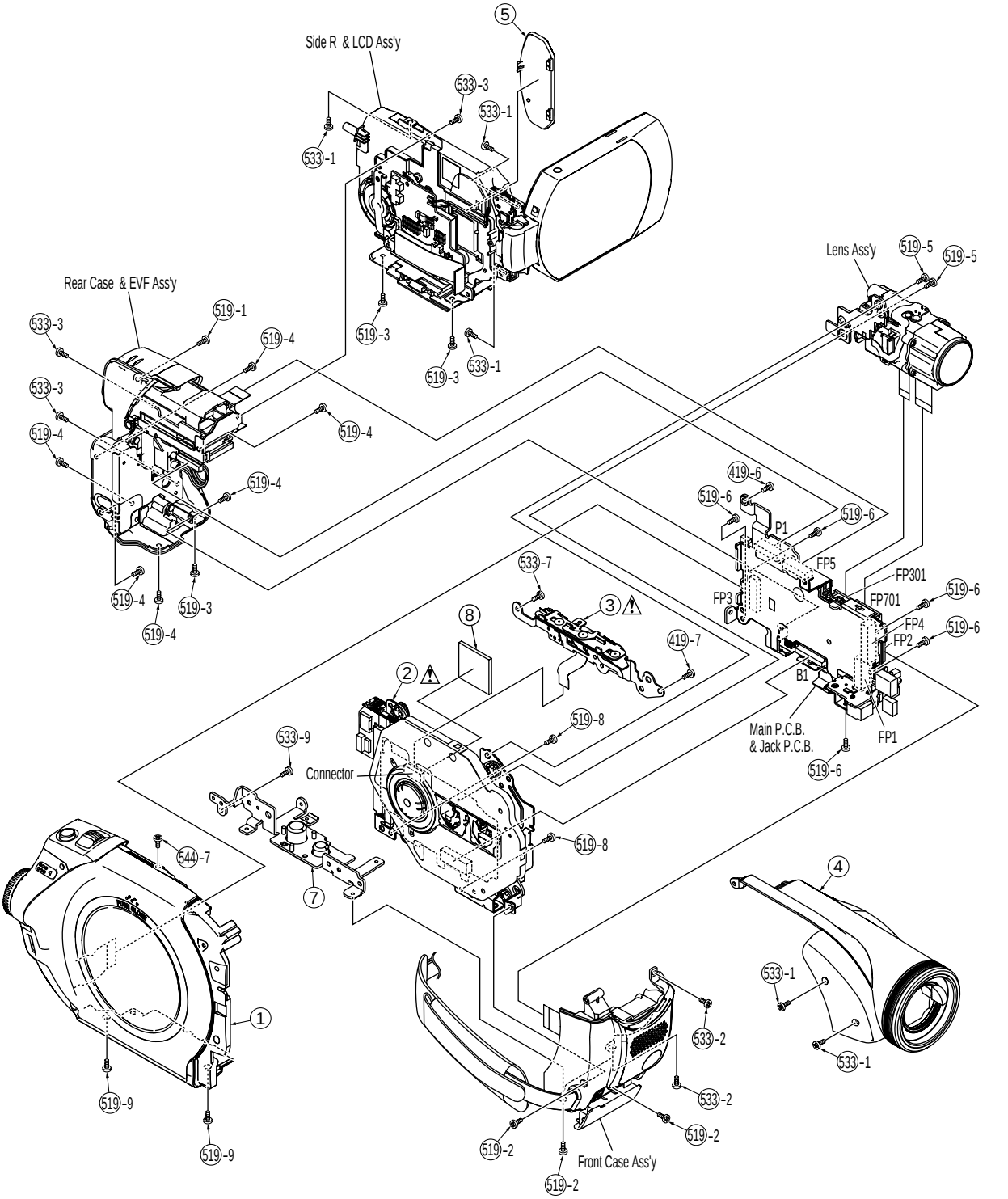
# ❶ MAIN PARTS SECTION

**Note:**

1. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
2. The parts indicated by the dotted line ⬚ are for Ass'y only and are not supplied.
3. Disregard Ref. No. suffixes when ordering parts. They are used to describe parts in "Disassembly and Assembly Instructions" section.

**IMPORTANT SAFTY NOTICE:**

COMPONENTS IDENTIFIED BY THE SIGN ⚠ HAVE SPECIAL CHARACTERISTICS IMPORTANT FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SPECIFIED PARTS.




H G F E D C B A

1 2 3 4 5 6

## FRONT CASE, MAIN P.C.B. & JACK P.C.B.

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | E30 | Jack P.C.B | 2 | (519), B2 | 9 |
| 2 | E10 | Main P.C.B | 2 | ----- | - |

A B C D E F

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | E20 | Front P.C.B. | 2 | 5(533) | 10 |
| 2 | 52 | **(For models with Light)** LED Light Lens | 2 | ----- | 10 |
| 3 | 51 | Front Case Unit | 2 | ----- | 10 |

A B C D E F

**How to read chart shown above:**

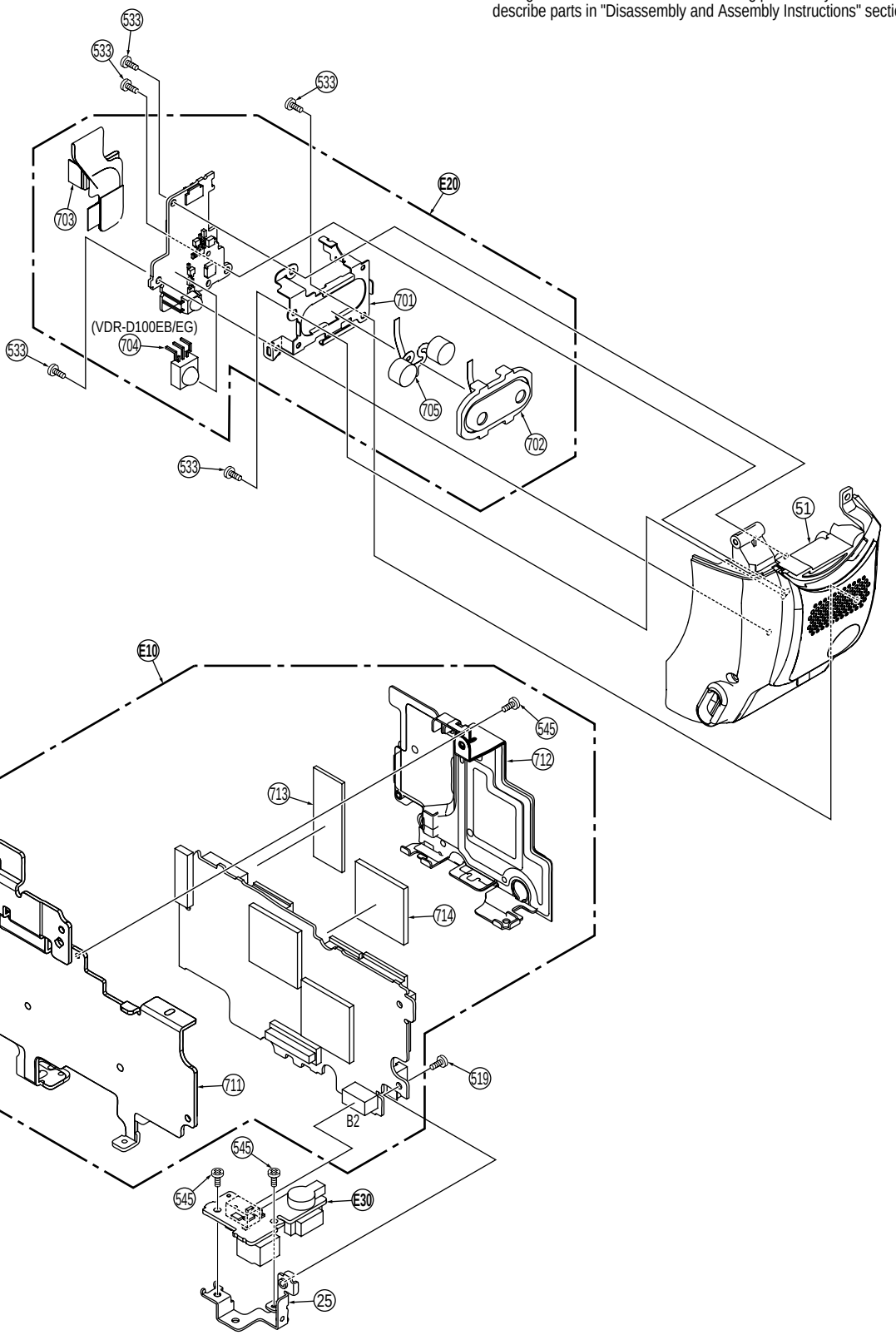
A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
B: Ref No.
C: Part to be removed or installed.
D: Section No.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.

F: Refer to "Notes in chart."

# ❷ FRONT CASE, MAIN P.C.B. AND JACK P.C.B. SECTION

**Note:**

1. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
2. The parts indicated by the dotted line ⬚ are for Ass'y only and are not supplied.
3. Disregard Ref. No. suffixes when ordering parts. They are used to describe parts in "Disassembly and Assembly Instructions" section.




H G F E D C B A

1 2 3 4 5 6

## SIDE CASE R PORTION

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | - | Side R/SD Ass'y | 3 | (408), (457) | 11 |
| 2 | (45) | Speaker | 3 | 2(533), (46) | 11 |
| 3 | (E60) | Side R P.C.B. | 3 | 2(533), Unsolder | 11 |
| 4 | (E61) | Open Switch P.C.B. | 3 | (533), (48) | 11 |

A B C D E F

**How to read chart shown above:**

A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
B: Ref No.
C: Part to be removed or installed.
D: Section No.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.

F: Refer to "Notes in chart."

## LCD PORTION

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | (33) | LCD Case A Unit | 3 | 2(519), 2(546), 7(L-1) | - |
| 2 | (32) | LCD Shaft Case Unit | 3 | FP8101 | - |
| 3 | (E40) | LCD Backlight P.C.B. | 3 | (533), (L-2), FP8102 | 12 |
| 4 | (34) | LCD Case B | 3 | 4(L-3) | 12 |
| 5 | -<br>(35) | LCD Panel Ass'y<br>LCD Shield Plate Unit | 3 | 3(L-4) | 12 |

A B C D E F

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | (42) | LCD Panel | 3 | ----- | 13 |
| 2 | (39) | Reflect Sheet | 3 | (L-5) | 13 |
| 3 | (37) | Lead Light Panel | 3 | ----- | 13 |
| 4 | (38) | Diffusion Sheet | 3 | ----- | 13 |
| 5 | (40) | BEF Sheet | 3 | ----- | 13 |
| 6 | (41) | BEF Sheet A | 3 | ----- | 13 |
| 7 | (36) | LCD Panel Holder Unit | 3 | ----- | 13 |

A B C D E F

**How to read chart shown above:**

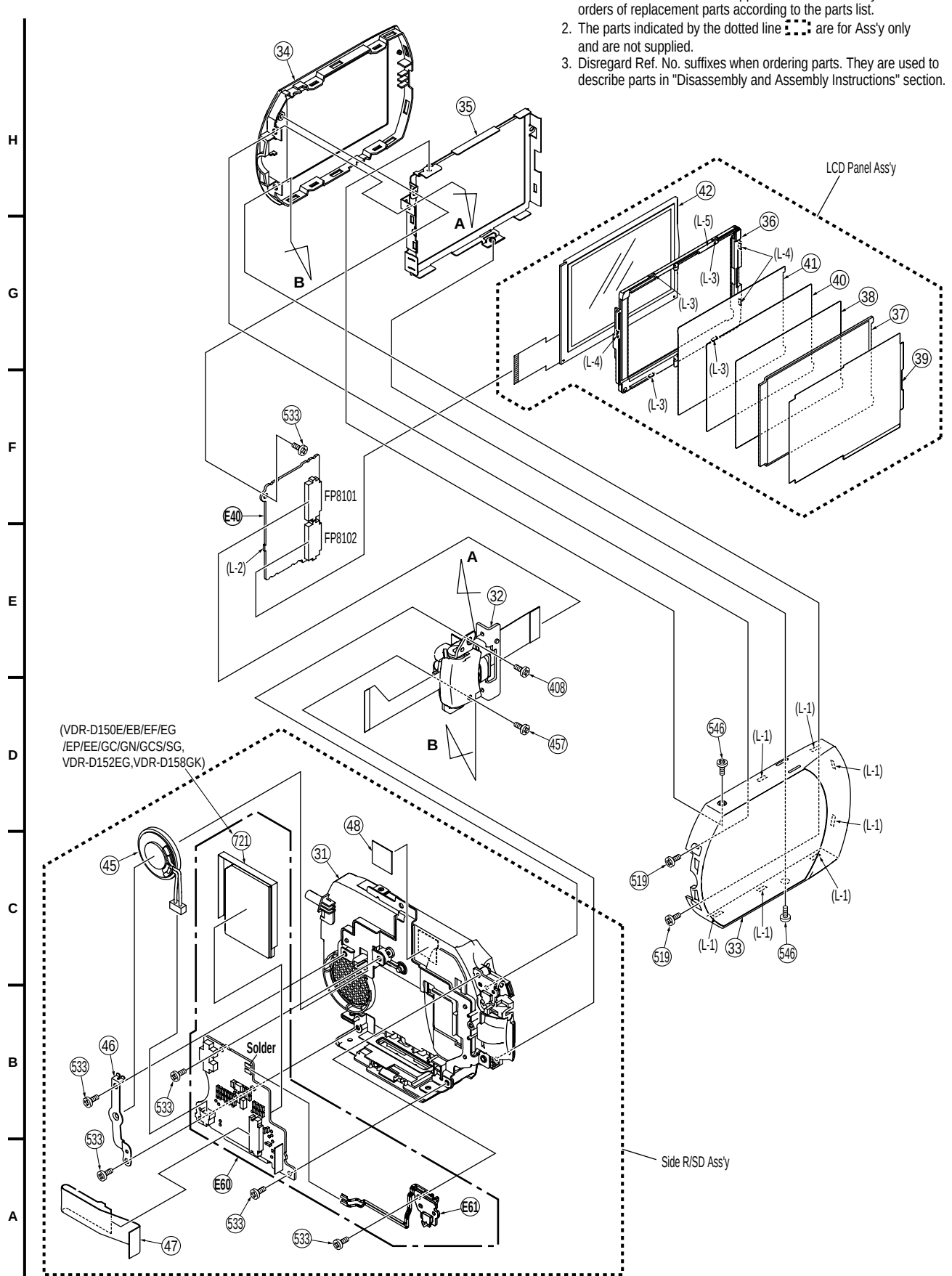
A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
B: Ref No.
C: Part to be removed or installed.
D: Section No.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.

F: Refer to "Notes in chart."

# ❸ SIDE CASE R AND LCD SECTION

**Note:**

1. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
2. The parts indicated by the dotted line ⬚ are for Ass'y only and are not supplied.
3. Disregard Ref. No. suffixes when ordering parts. They are used to describe parts in "Disassembly and Assembly Instructions" section.



## CCD & LENS PORTION

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | E50 | CCD P.C.B. | 4 | 2(536) | 14 |
| 2 | 64 | Filter Rubber | 4 | ----- | 14 |
| 3 | 63 | Optical Filter | 4 | ----- | 14 |

A B C D E F

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | 26 | Lens Holder | 4 | 2(533) | - |
| 2 | 65 | Zoom Motor Unit | 4 | 2(538), Unsolder | 15 |
| 3 | 66 | Focus Motor Unit | 4 | 3(538), Unsolder | 15 |

A B C D E F

**How to read chart shown above:**

A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
B: Ref No.
C: Part to be removed or installed.
D: Section No.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.

F: Refer to "Notes in chart."

# ❹ CCD AND LENS SECTION

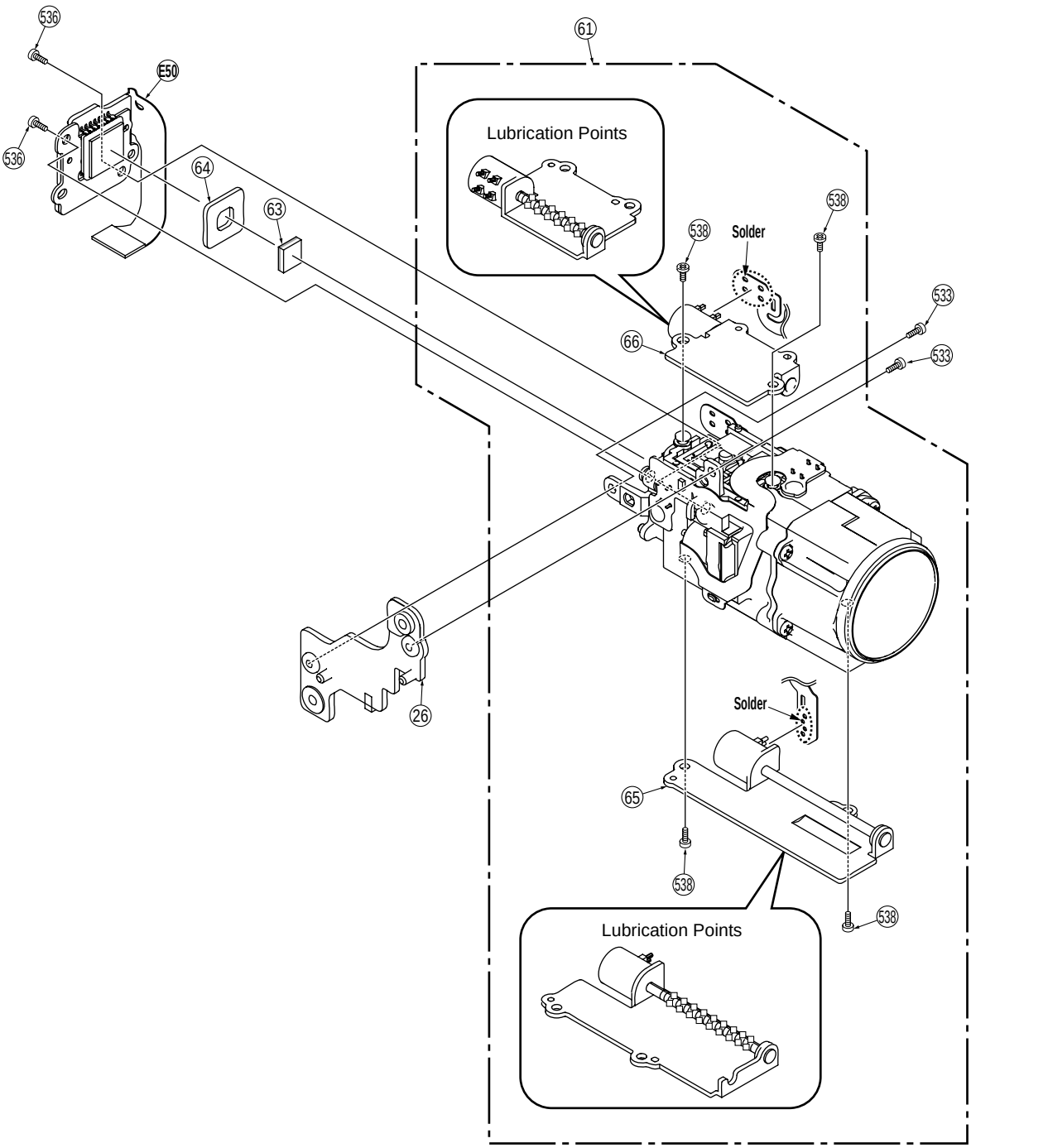
**Note:**

1. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
2. The parts indicated by the dotted line ⬚ are for Ass'y only and are not supplied.
3. Disregard Ref. No. suffixes when ordering parts. They are used to describe parts in "Disassembly and Assembly Instructions" section.

LUBRICATION POINTS

When the marked parts are replaced, apply the recommended lubricants or adhesive for better maintenance of the unit.

| Mark | Kind of Lubricant | Availability | Part Number |
|---|---|---|---|
| □□□ | Grease | Available from Factroy | LSUQ0050 |




H G F E D C B A

1 2 3 4 5 6

## REAR CASE & EVF PORTION

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | ㉘ | EVF Unit | 5 | 2(433), (L-1) | 16 |
| 2 | ㉗ | Rear Case Unit | 5 | ----- | 16 |

A B C D E F

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | ⑬ | EVF Base Frame | 5 | FP901 | 17 |
| | ⑮ | EVF Earth Plate | | | |
| 2 | ⑰ | EVF F.P.C. | 5 | ----- | 17 |

A B C D E F

| STEP No. | Ref. No. | PART | Section No. | REMOVE | NOTE |
|---|---|---|---|---|---|
| 1 | ⑱ | Eye Cap | 5 | 2(533), (L-2) | 18 |
| 2 | ㉓ | EVF Lens Unit | 5 | ----- | 18 |
| 3 | ㉒ | Eye Sight Lever | 5 | ----- | 18 |

A B C D E F

**How to read chart shown above:**

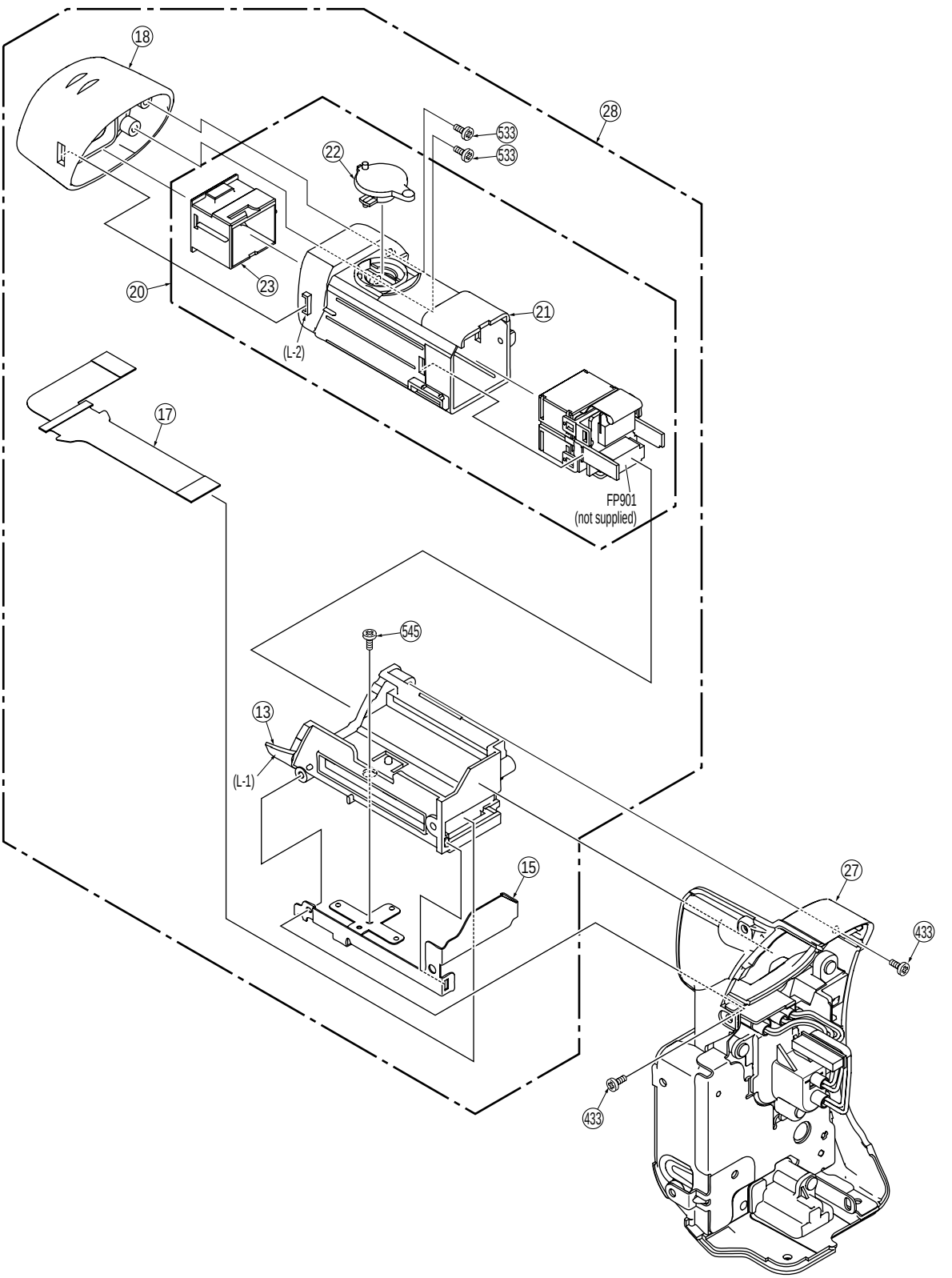
A: Order of Procedure steps.
When reassembling, perform steps(s) in reverse order.
B: Ref No.
C: Part to be removed or installed.
D: Section No.
E: Identification of part to be removed, unhooked, unlocked, released, unplugged, unclamped, or unsoldered.

F: Refer to "Notes in chart."

# ❺ REAR CASE AND EVF SECTION

**Note:**

1. Parts with no Ref. No. in "EXPLODED VIEW" are not supplied. And some Ref. No. will be skipped. Be sure to make your orders of replacement parts according to the parts list.
2. The parts indicated by the dotted line ⬚ are for Ass'y only and are not supplied.
3. Disregard Ref. No. suffixes when ordering parts. They are used to describe parts in "Disassembly and Assembly Instructions" section.



## Notes in chart

1. **Removal of Top Cover Unit**
   1) Open the LCD and remove the 5 Screws (533).
   2) Slide the EVF to extend it, then remove Screw (519).
   3) Pull and carefully slide the Top Cover Unit.

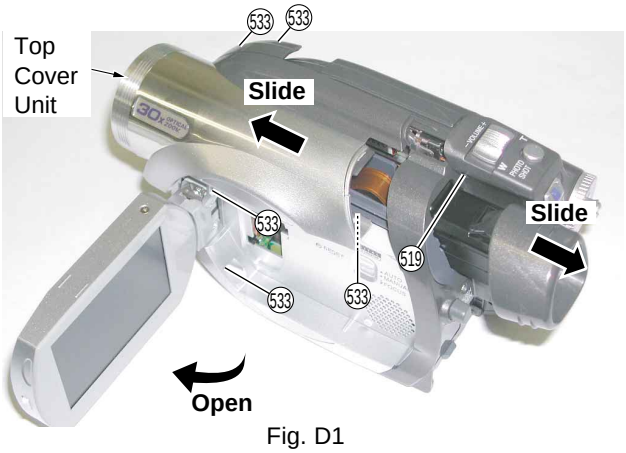
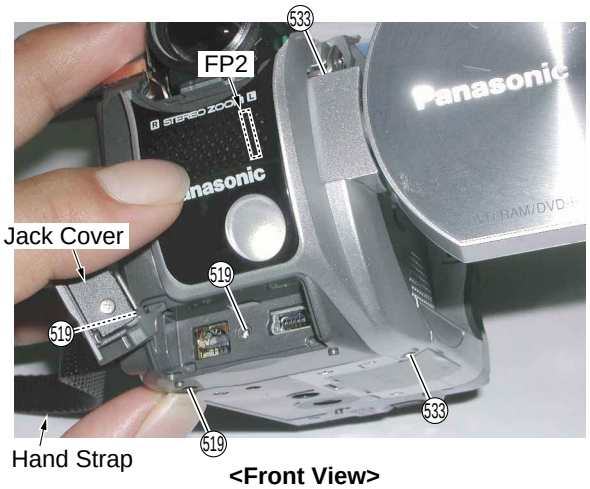



Fig. D1

2. **Removal of Front Case Ass'y**
   1) Open the Jack Cover, then remove Screw (519).
   2) Remove the 4 Screws (519, 533).
   3) Disconnect the Front F.P.C. from Connector FP2.
   4) Remove the Front Case Ass'y while releasing the Hand Strap.




**<Front View>**

Fig. D2

3. **Installation of Side R & LCD Ass'y**
   1) Connect the LCD F.P.C. and Side R F.P.C. to the Connectors FP4 and FP1 so as not to damage the F.P.C.s.
   2) Secure Rear Portion, and tighten 6 Screws (519, 533)

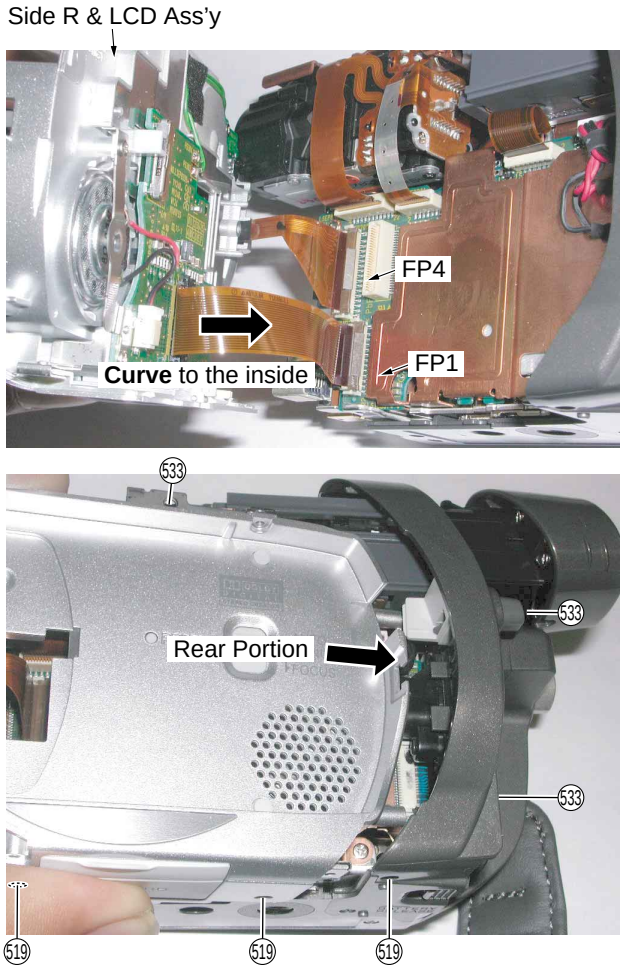



Fig. D3

4. **Removal of Rear Case & EVF Ass'y**
   1) Disconnect the EVF F.P.C. and the Connector Cable from Connector FP5 and P1.
   2) Remove the 6 Screws (519).

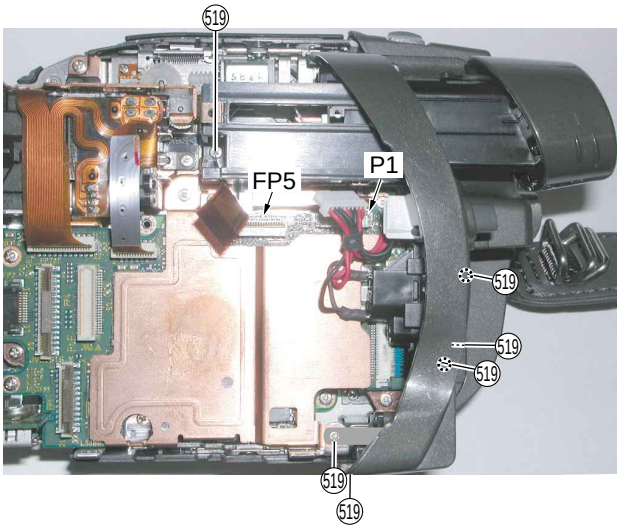



Fig. D4

5. **Installation of Lens Ass'y**
   Take care not to damage the motor leads.
   1) Install the Lens Ass'y with the 2 holes and 2 Screws (519).
   2) Connect the F.P.C.s to Connector FP301, FP701.

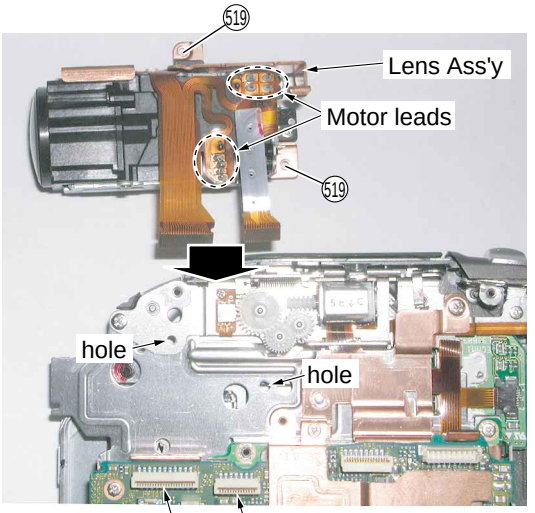



Fig. D5

6. **Removal of Main P.C.B. and Jack P.C.B.**
   1) Remove the 6 Screws (419, 519).
   2) Disconnect the Zoom Switch F.P.C. from Connector FP3.
   3) Remove the Main P.C.B. and Jack P.C.B. to disconnect Connector B1 (B to B Connector).

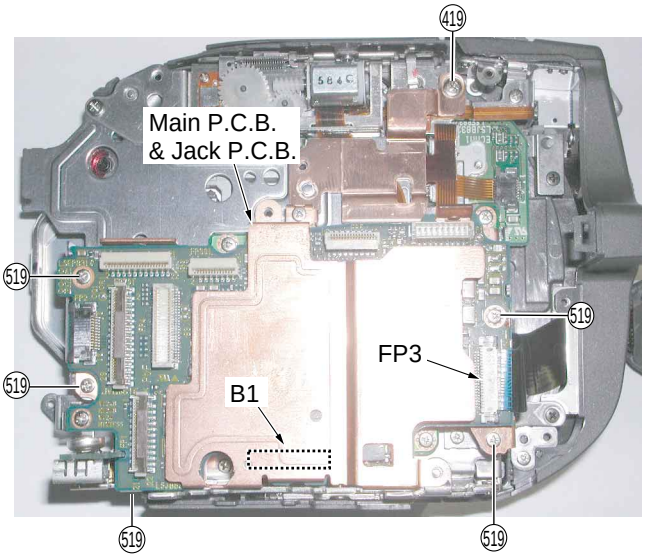



Fig. D6

7. **Removal of Disc Cover Lock Unit**
   1) Remove the 3 Screws (419, 533, 544)
   2) Slide the Lock Lever to open the Disc Cover.
   3) Disconnect the F.P.C. from Connector on the DVD Drive Frame Unit.
   4) Remove the Disc Cover Lock Unit. Take care not to damage the 2 Switches.

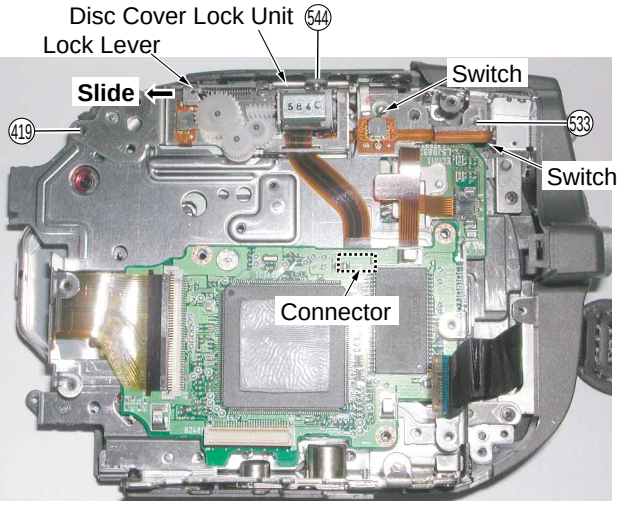



Fig. D7

8. **DVD Drive Frame Unit Caution**

**Caution**

Laser light striking the eye may cause your eyesight to be lost: For safety, be sure to remove any power supply (AC adaptor/charger, battery, etc.) from the DVD video camera/recorder before starting work.

**<CSA requirement>**

CAUTION: VISIBLE LASER RADIATION DO NOT STARE INTO THE BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS CLASS 2M

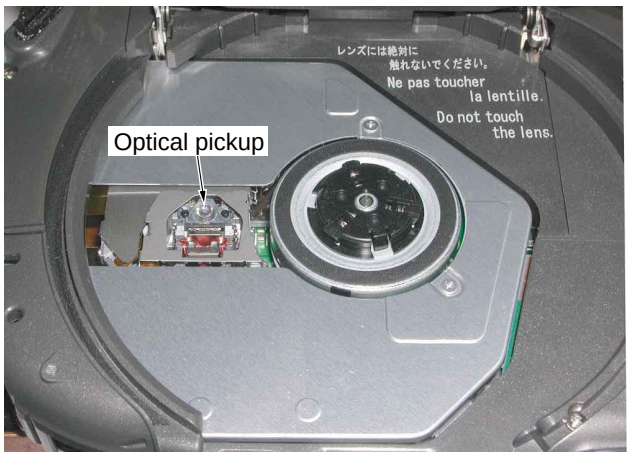



Fig. D8-1

**Installation of DVD Drive Frame Unit**

1) Position the DVD Drive Frame Unit correctly so that the Zoom Switch F.P.C. is not pinned beneath it.
2) Tighten the 2 Screws (519).

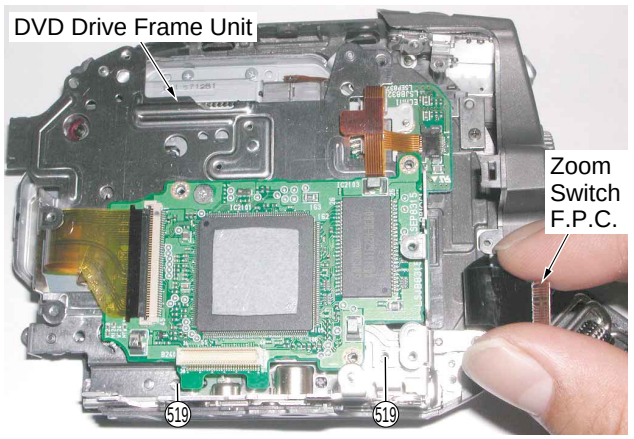



Fig. D8-2

9. **Installation of Jack P.C.B.**
   1) Connect the Connector B2 (B to B Connector).
   2) Tighten Screw (519).

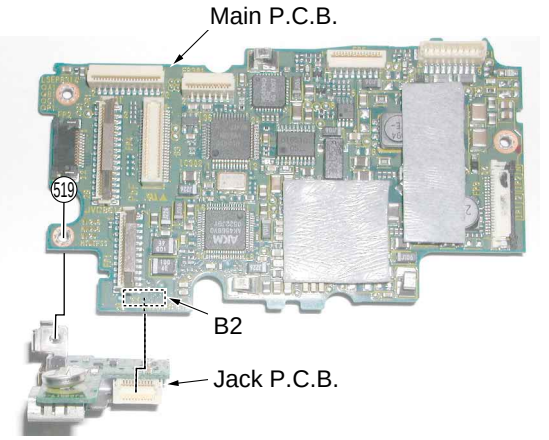
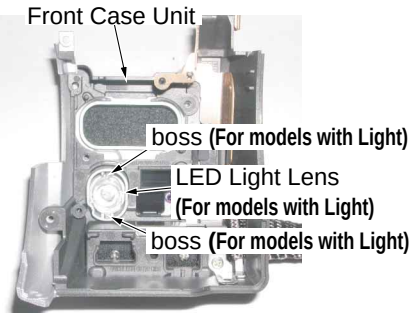



Fig. D9

10. **Installation of Front P.C.B.**
    1) Install the LED Light Lens **(For models with Light)** into the Front Case Unit.
    2) Install the Front P.C.B. with 2 bosses of the LED Light Lens and the 5 Screws (533).



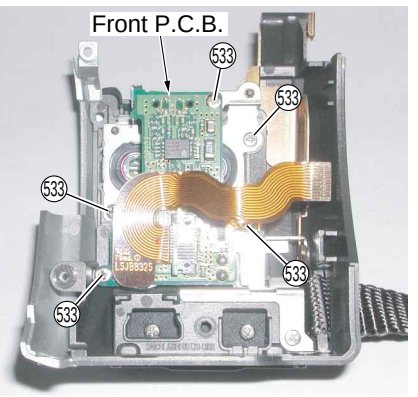




Fig. D10

11. **Removal of Side R/SD Ass'y**
    1) Close the LCD (Ass'y).
    2) Remove the 2 Screws (408, 457) as shown below.

**Installation of Side R/SD Ass'y**

1) Pass the LCD F.P.C. into the slot.
2) Install the LCD (Ass'y) into the Side R/SD Ass'y so as not to damage the LCD open/close SW.

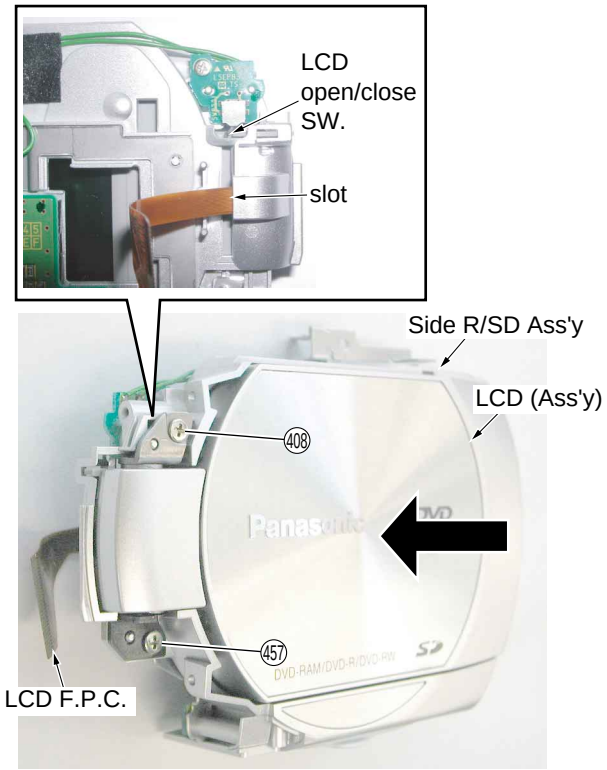



Fig. D11-1

**Removal of Speaker, Side R P.C.B. and Open Switch P.C.B.**

1) Remove the 2 Screws (533) and remove the Speaker Spring Plate.
2) Disconnect Connector P6301, then remove the Speaker.
3) Remove the 2 Screws (533), then unsolder the connector leads to remove the Side R P.C.B.
4) Remove Screw (533) and sheet, then remove the Open Switch P.C.B.

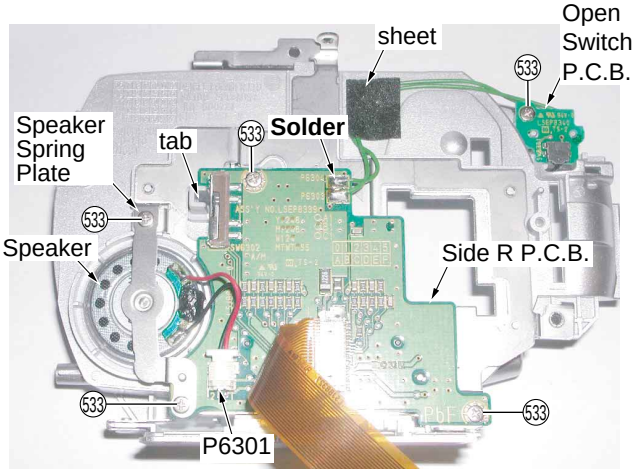



Fig. D11-2

12. **Installation of LCD Backlight P.C.B., LCD Panel Ass'y, LCD Shield Case Unit and LCD Case B**

Be extremely careful of LEDs when handling the LCD Backlight P.C.B.

Install in order shown below.

1) Install the LCD Shield Case Unit into the LCD Case B with 2 bosses.
2) Install the LCD Panel Ass'y onto the LCD Case B with the 7 Locking Tabs (L-3), (L-4) while carefully bending the LCD F.P.C. at its base so as not to damage it.
3) Install the LCD Backlight P.C.B. onto the LCD Panel Ass'y with the Locking Tab (L-2).
4) Tighten Screw (533) while keeping the LCD Backlight P.C.B. pressed toward the right. Then, connect the F.P.C. to Connector FP8102.

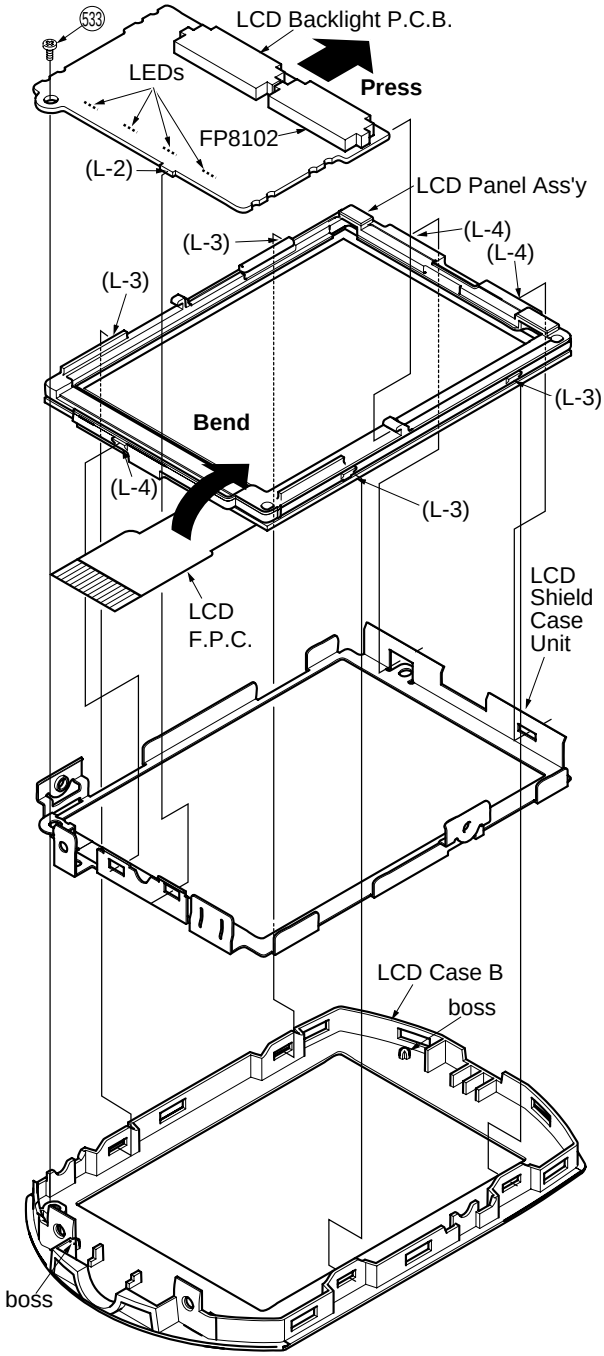


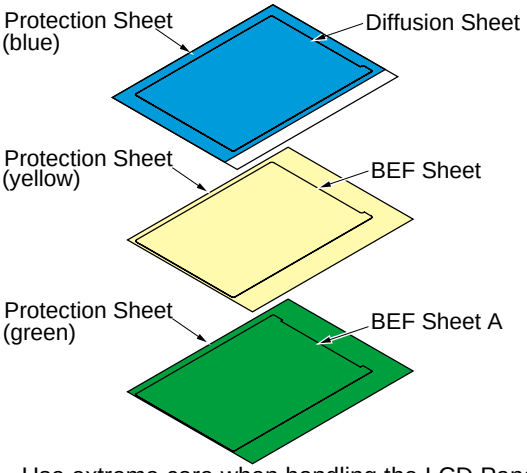

Fig. D12

13. **Installation of LCD Panel, Reflect Sheet, Lead Light Panel, Diffusion Sheet, BEF Sheet, BEF Sheet A and Panel Holder Unit**

a. When replacing the LCD Panel, the Diffusion Sheet, the BEF Sheet and the BEF Sheet A, be sure to remove the Protection Sheets.

**To distinguish Sheets from their Protection Sheets:**

- A blue Protection Sheet is affixed to both faces of the Diffusion Sheet.
- A yellow Protection Sheet is affixed to both faces of the BEF Sheet.
- A green Protection Sheet is affixed to both faces of the BEF Sheet A.




b. Use extreme care when handling the LCD Panel, the Reflect Sheet, the Lead Light Panel, the Diffusion Sheet, the BEF Sheet and the BEF Sheet A to avoid damage, dust, and spots (especially fingerprints, etc.)

Install in order shown below.

1) Install in order, the BEF Sheet A, BEF Sheet and Diffusion Sheet while inserting the corners of each sheet into the slots of the Panel Holder Unit.
2) Install the Lead Light Panel while inserting the corners into the slots of the Panel Holder Unit.
3) Place the Reflect Sheet so it is aligned with the edge of the Panel Holder Unit, then install it using the adhesive tape portions of the Reflect Sheet.

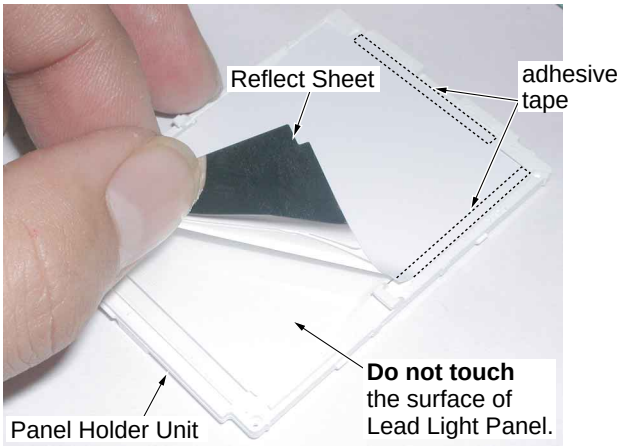



Fig. D13-1

4) Install the LCD Panel with adhesive tape so that the cross marks are positioned in the center of the holes in the Panel Holder Unit.

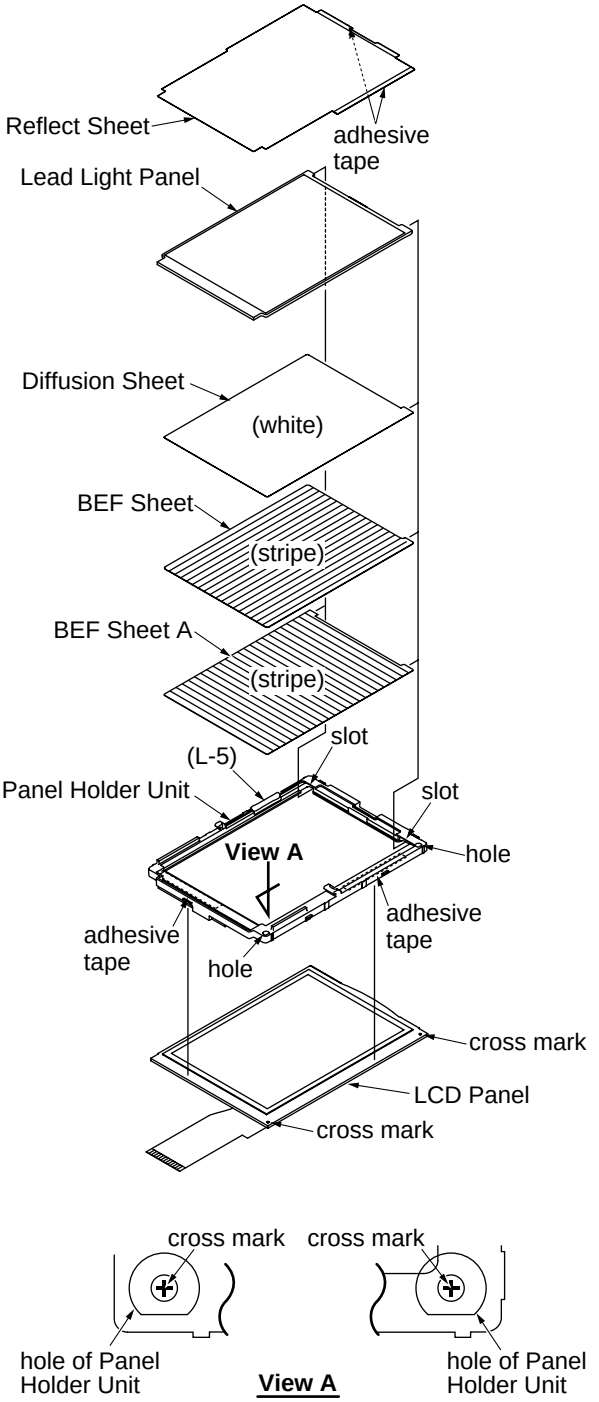



Fig. D13-2

14. **Removal of CCD P.C.B., Filter Rubber and Optical Filter**
**CAUTION:**
1) When removing the CCD P.C.B., take care that the Optical Filter does not fall out.
2) Use extreme caution when removing the CCD P.C.B. as it is easily damaged by static electricity. Use a Wrist Strap while removing and installing.
3) Do not touch the CCD window surface.

**Installation of CCD P.C.B., Filter Rubber and Optical Filter**

Install in order shown below.

1) Install the Optical Filter correctly.
**Note:** Make sure that no dust gets on the Optical Filter or in the Lens Unit. Clean the Optical Filter with lens cleaning paper dampened with lens cleaner if necessary.
2) Install the Filter Rubber on the Optical Filter correctly as shown below.
**Note:** Make sure that no dust gets on the Filter Rubber.
3) Install the CCD P.C.B. into the Lens Unit. Then, tighten the 2 Screws (536), and secure the CCD F.P.C. on the pin.
**Note:** Do not touch the Lens Surface. Clean the surface with lens cleaning paper dampened with lens cleaner if necessary.

15. **Installation of Zoom Motor Unit/Focus Motor Unit**
Install the Zoom Motor Unit/Focus Motor Unit so that the Shaft of the Zoom Motor Unit/Focus Motor Unit is set in the Holder.

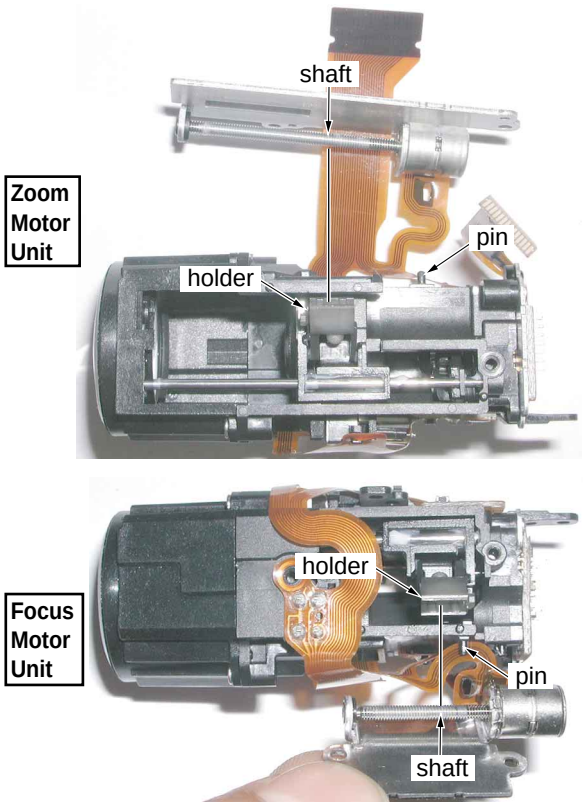
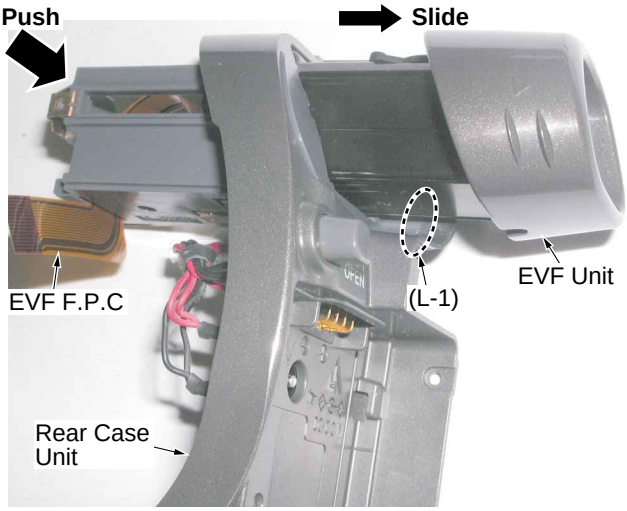



Fig. D14

16. **Removal of EVF Unit**
1) Remove the 2 Screws (433).
2) Slide to extend the EVF Unit.
3) Push to release the Locking Tab (L-1), and remove the EVF Unit. Take care not to damage the EVF F.P.C.



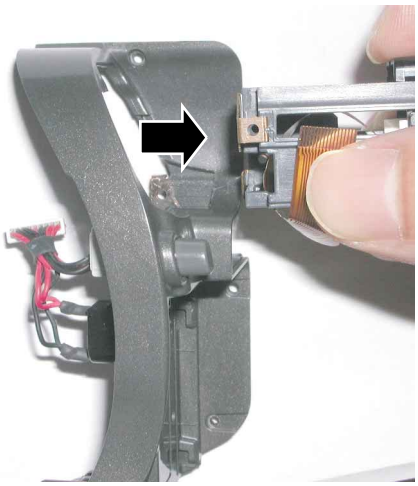



Fig. D15

17. **Installation of EVF Base Frame, EVF F.P.C.**
    1) Pass the EVF F.P.C. through the EVF Base Frame hole.
    2) Connect the EVF F.P.C. to Connector FP901.
    3) Install the EVF Case Ass'y into EVF Base Frame so that the ribs are inserted into the slots of the EVF Base Frame.
    4) After installing, confirm the EVF moves correctly.

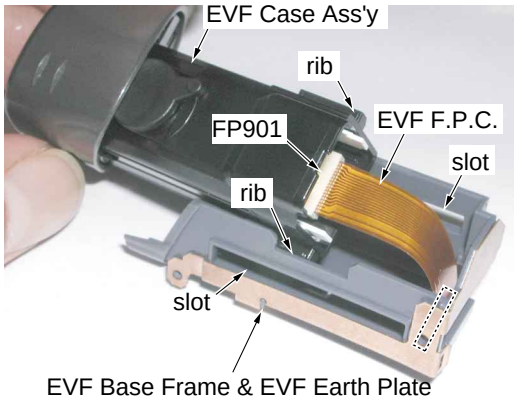


Fig. D16

18. **Removal of Eye Cap**
    1) Remove the 2 Screws (533).
    2) Remove the Eye Cap, then release the Locking Tab (L-2).

**Handling cautions of EVF Lens Unit**

Use extreme care when handling the EVF Lens Unit to avoid damage, dust, and spots (especially fingerprints, etc.)

**Installation of EVF Lens Unit, Eye Sight Lever**
1) Install the Eye Sight Lever into the EVF Case in the direction shown.
2) Install the EVF Lens Unit fitting both ribs into the EVF.
3) After installing, confirm that the Eye Sight Lever and EVF Lens Unit work together correctly.

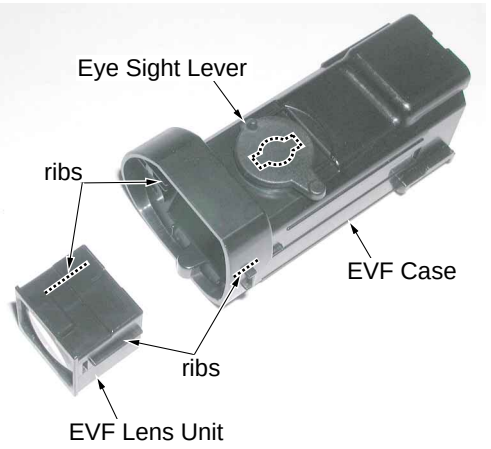


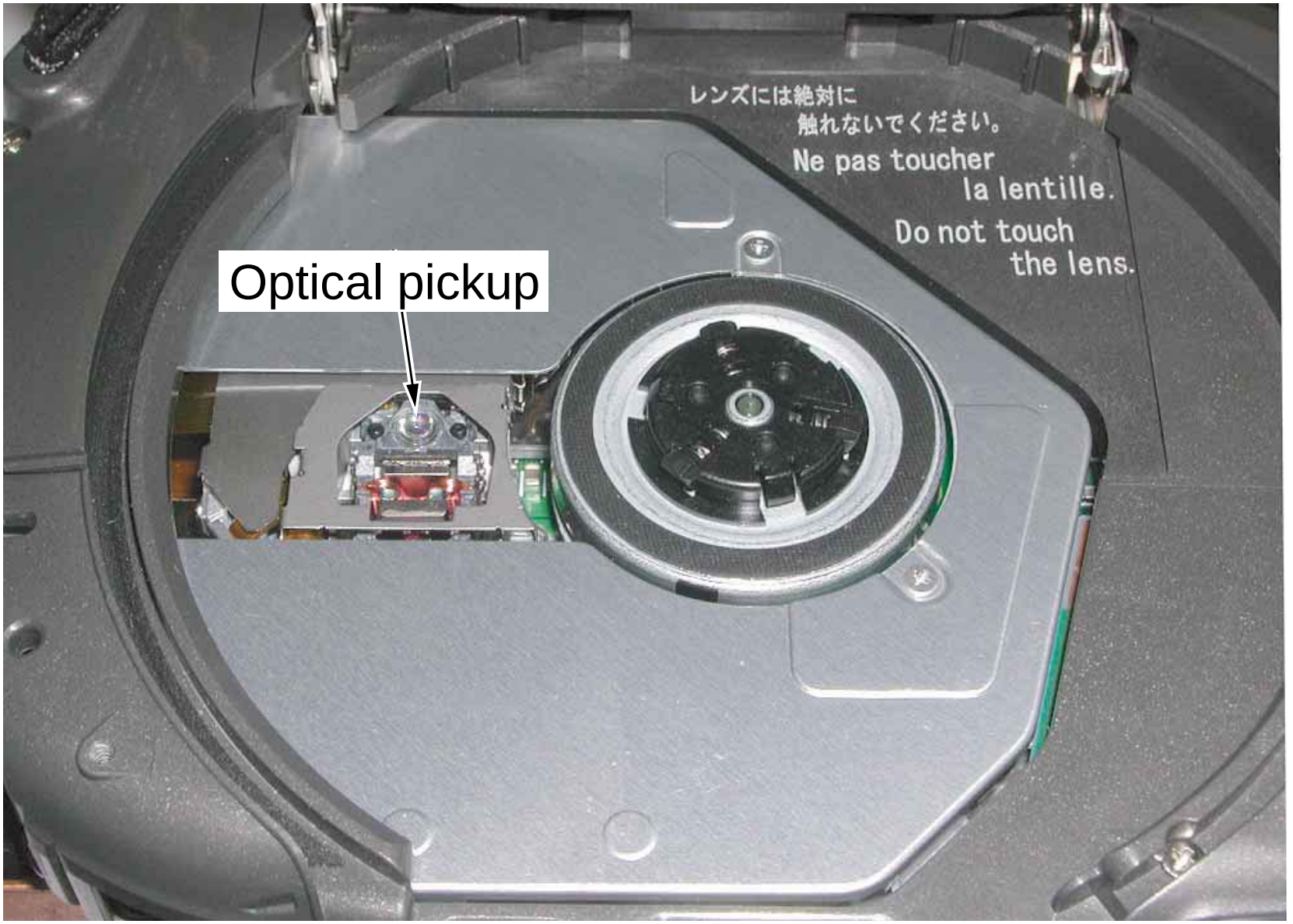
Fig. D17

## Caution

Laser light striking the eye may cause your eyesight to be lost: For safety, be sure to remove any power supply (AC adaptor/charger, battery, etc.) from the DVD video camera/recorder before starting work.

## <CSA requirement>

CAUTION: VISIBLE LASER RADIATION DO NOT STARE INTO THE BEAM OR VIEW DIRECTLY WITH OPTICAL INSTRUMENTS CLASS 2M



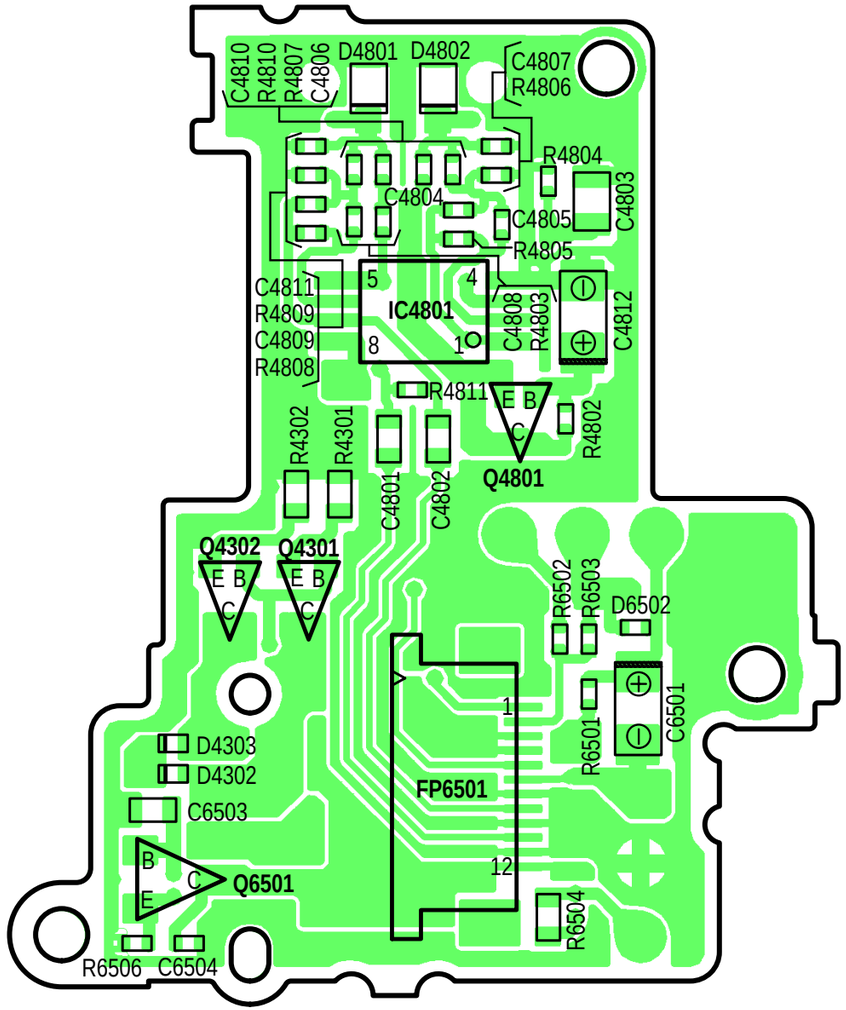
**FRONT P.C.B. LSEP8316A1 VDR-D100EG/EB**
**LSEP8316C1 VDR-D150E/EB/EF/EG/EP/EE/GC/GN/GCS/SG,VDR-D152EG,VDR-D158GK**

NOTE:
FOR SCHEMATIC DIAGRAM AND CIRCUIT BOARD LAYOUT NOTES,
REFER TO BEGINNING OF SCHEMATIC SECTION.

NOTE:
CIRCUIT BOARD LAYOUT SHOWS COMPONENTS INSTALLED FOR VARIOUS MODELS.
FOR PROPER PARTS CONTENT FOR THE MODEL YOU ARE SERVICING,
PLEASE REFER TO THE SCHEMATIC DIAGRAM AND PARTS LIST.

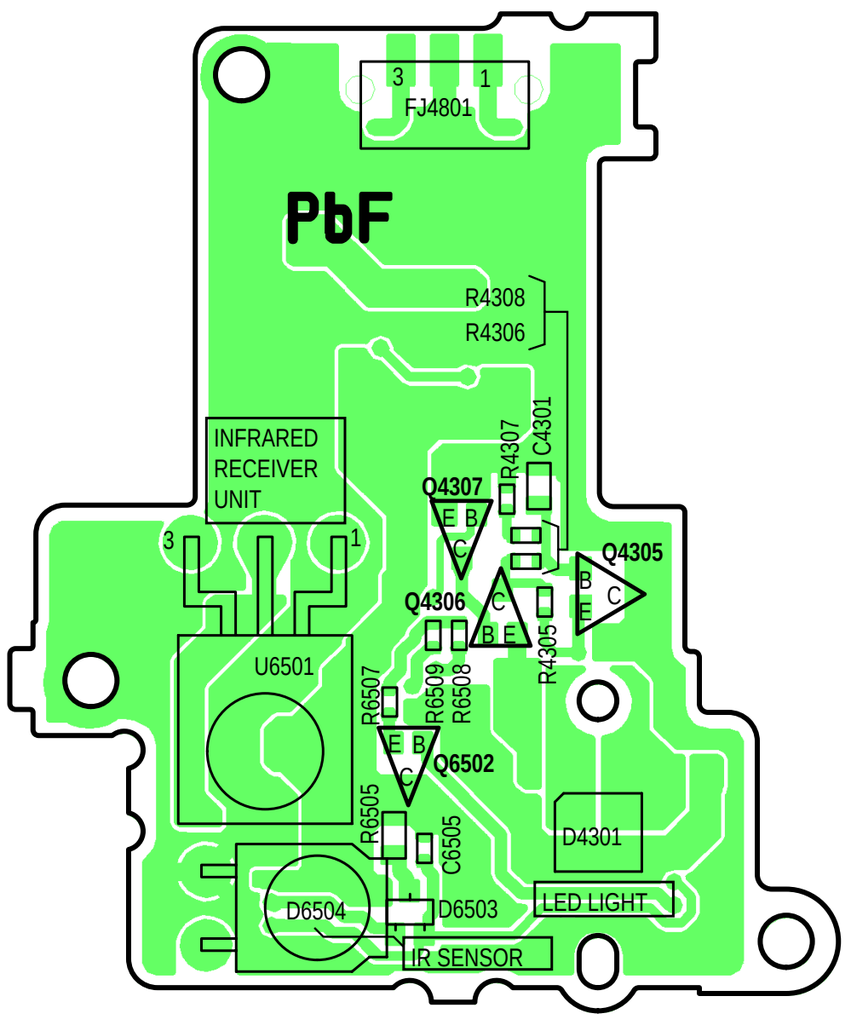
NOTE:
CIRCUIT BOARD LAYOUT INCLUDES COMPONENTS WHICH ARE NOT USED.

## (COMPONENT SIDE)




(DUAL PATTERNS)

## (FOIL SIDE)




(DUAL PATTERNS)

**Parts Location**

| Front P.C.B. | | | | | |
|---|---|---|---|---|---|
| Integrated Circuit | | | Resistors | | |
| IC4801 | B-3 | C | R4305 | B-2 | F |
| Transisters | | | R4306 | B-3 | F |
| Q4801 | B-3 | C | R4307 | B-3 | F |
| Q6501 | A-1 | C | R4308 | B-3 | F |
| Q6502 | B-2 | F | R4802 | C-3 | C |
| Connector | | | R4803 | B-3 | C |
| FP6501 | B-2 | C | R4804 | B-4 | C |
| Diodes | | | R4809 | B-3 | C |
| D6503 | B-1 | F | R4810 | B-4 | C |
| D6504 | B-1 | F | R6501 | C-2 | C |
| Capacitors | | | R6502 | C-2 | C |
| C4801 | B-3 | C | R6503 | C-2 | C |
| C4802 | B-3 | C | R6504 | C-1 | C |
| C4803 | C-3 | C | R6505 | B-1 | F |
| C4804 | B-3 | C | R6506 | A-1 | C |
| C4805 | B-3 | C | R6507 | B-2 | F |
| C4806 | B-4 | C | R6508 | B-2 | F |
| C4808 | B-3 | C | R6509 | B-2 | F |
| C4809 | B-3 | C | Miscellaneous | | |
| C4810 | A-4 | C | U6501 | B-2 | F |
| C4812 | C-3 | C | | | |
| C6501 | C-2 | C | | | |
| C6503 | A-1 | C | | | |
| C6504 | A-1 | C | | | |
| C6505 | B-1 | F | | | |

**FRONT P.C.B.**
**LSEP8316A1/LSEP8316C1**
**VDR-D100EG/VDR-D100EB/VDR-D150E/VDR-D150EB/VDR-D150EF/VDR-D150EG/VDR-D150EP/VDR-D150EE**
**/VDR-D150GC/VDR-D150GN/VDR-D150GCS/VDR-D150SG/VDR-D152EG/VDR-D158GK**